

Food &c

1

General Principles of Dietetics

Proximate Elements of

Food —

Blank lined paper with faint handwriting.

See next page

---

about

Cellulose,

Lignin

Pectin

&

Drain

(Before "Saline Principles" etc.)



- 1871 - 1. Hygiene  
 2. Vital Statistics } 10 weeks  
 3. Public Hygiene }  
 4. Alimentation } 12

1st Lecture  
 Historical Introduction  
 4  
 Diseases of Hygiene -  
 & its foundations -

5. Atmosphere &c 9  
 6. Climate, &c 2  
 7. Clothing, Bathing  
 8. Excretions, &c 2  
 9. Exercise &c  
 10. Mental Hygiene  
 11. Sexual Hygiene 11  
 12. Dietetic Hygiene

Physiology, & Sanitary Experience.

Hygiene is the science of the preservation of health  
 by the use of facts, derived from the study of  
 the human body, and the application of the principles  
 which they suggest to the prevention of disease, and  
 the promotion of health. It is a branch of medicine  
 of a lower order, and is not a science in the  
 proper sense of the word. It is a practical science.

Then, begin Public Hygiene, with  
 Alimentation.

[1871; began, after brief introductory, with Etology; then  
 Vital Statistics; next, Public Hygiene; on these subjects, 10 lectures;  
 Alimentation next, -]

On the Prevention of Disease



DIVISIONS  
OF  
HYGIENE.

### Lecture II.

Hygiene is divided into personal and public, and between the two, and merging into each, is domestic. There might be a question as to whether we should not begin to treat of public hygiene first; but sanitary experience and physiology both point to private hygiene as the starting place. Personal hygiene has the following

PERSONAL  
HYGIENE.

FUNCTIONAL  
DIVISIONS.

1. Functional Divisions:
- |                 |                         |
|-----------------|-------------------------|
| Alimentation,   | Muscular Action,        |
| Respiration,    | Excretion,              |
| Heat and Light, | Reproduction,           |
| Circulation,    | Cerebro-nervous Action. |

GENERAL  
SUBJECTS.

2. General Subjects:
- |           |                   |
|-----------|-------------------|
| Etiology, | Vital Statistics. |
|-----------|-------------------|

Personal hygiene is founded directly on physiology. We will begin with the first of the functional divisions, viz:

ALIMENTATION.

#### Alimentation

- 1<sup>st</sup> Manner of Eating, 2<sup>nd</sup> Times of Meals  
3<sup>rd</sup> Quantity of Food 4<sup>th</sup> Nature and Quality.

MANNER  
OF  
EATING.

As to the manner of eating, we should thoroughly masticate our food so as to get it mixed with the saliva. ~~avoid~~ to allow the

\* Starch, in the opinion of <sup>almost</sup> all physiologists ~~almost~~ ~~except~~ Dr Dalton, is digested partly by the saliva. Infants, therefore, should never be made to live on exclusively or principally farinaceous food before they have their chewing teeth; - the secretion of the salivary glands scarcely begins, also, before the ~~teeth~~ ~~at least~~ are coming through the gums. Generally <sup>little</sup> ~~no~~ action of the salivary glands before the end of 3 months. The same is true of the pancreatic secretion.

John Hunter's  
 offer with him  
 on subject, the other parts  
 Dr Hammond's reputation  
 the same



of this <sup>at</sup> mixture, but for reduction, meat the most

digestive action of the saliva. Vegetable food requires the most chewing\*. Not chewing our food well injures the teeth. (A dental convention which met some years ago, declared the main cause of the early decay of teeth in America, to be haste in chewing so that fibres were left in the teeth). Haste often causes dyspepsia; excess sometimes causes it too; but the former is generally the cause in America. Those who have no teeth, should take only liquid or soft food. Infants too young to have teeth are provided with milk, suited to their condition. So those who are old and without teeth should take such food. During meals, the mind should be free from care. Hence, it is a mistake to attempt to study at dinner. Social enjoyment should be indulged. The brain, muscles and every other part of the body require nervous force. When any part is used much it draws this force from all the other parts. Hence if we study while we are eating, the force will be diverted from the stomach. For this reason we should not eat after violent

INJURY TO TEETH

main

DYSPEPSIA.

STUDYING AT MEALS.

EATING AFTER EXERCISE

\* Horses have small stomachs, & are made  
 to eat a little often \_\_\_\_\_  
 & Hammond's <sup>+</sup> experiments on dogs.

Dr. Lethby on the "elaborate menu"  
 of Finns at American Hotels -  
10 hours for disposal of 5 meals!

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 for these two "slips" - without copying them.]

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the matter of  
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^ Horses have small  
to eat a little softer  
& Hammond

Gr. 10  
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the Third's time (1327-1377) the dinner hour was nine in the morning. A century later, in Edward the Fourth's time (1461-1483), the general hour of breakfast with the nobility, whose meals were considerably earlier than those of tradesmen; yeomen and others, was seven; dinner was served at ten in the morning, and it generally lasted three hours; supper followed at four, and there was a collation at nine, before retiring. This collation consisted of beer and warm spiced wine. During the reigns of Edward VI, Mary and Elizabeth (1547-1603) the hours became later. The nobility, gentry and students dined at eleven in the forenoon, and supped between five and six in the afternoon; but the merchants, especially those of London, did not dine before twelve, and they supped at six; the farmers dined at noon and supped at seven or eight. Towards the close of Elizabeth's reign (1600) the dinner hour was changed from eleven to twelve, and this remained the hour until the time of William III (1689-1702).

The entire change in the habits of the people of England which took place after the restoration of Charles II (1660) contributed to increase the lateness of the hours for everything. It became fashionable among people of rank and fortune to have breakfast in bed and to hold receptions by the bedside. The ancient habit of all the members of the household taking their meals together was abrogated. Domestic followers and retainers came to be looked upon as "servants," and were treated as strangers to the family. They were limited to certain hours for their meals, and these hours were not allowed to interfere with those of their masters. Hence, it became necessary to prepare two sets of meals in every household where there were servants—one for the latter and one for the family. This lies at the root of the modern late hours. As the apartments occupied during the day by the family must be cleaned and put in order so as to be fit to receive them when they rise in the morning, the family refrained from rising until the domestics had time to do this. Another cause of late hours has been the vastly improved lighting up of the interior of houses. Even the old wax and tallow candles were a great improvement on what went before; then came the Argand lamp and other brilliant lamps, chandeliers, and, lastly, gas, which have entirely obviated the inconvenience which our ancestors suffered from darkness. The pressure of business in large cities is another cause. This is so severe now-a-days in large cities that men engaged in professional and mercantile pursuits cannot spare time to do more than take lunch in the middle of the day, so they postpone their dinner until the close of their day's work. But still another, and, perhaps, a more potent cause than all for late dinners, is the suburban railway. In very large cities men of business are no longer, as formerly, compelled to reside near their stores or offices; they can now, by means of railways or horse-cars, be conveyed from suburban residences to their places of business in less time than it took their fathers to walk from their town houses; hence they have more time to devote to business if need be, and they retire when it is over to their families at a later hour.

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Protestants, they may worship in their own homes and not public churches. Happily, the redoubtable Don is a long way from Madrid, with no prospect of getting there as king.

A pilgrimage to Jerusalem is the latest project in this line. The Bishop of Paris is organizing it and the pilgrims were to leave Marseilles about, the middle of this month for Alexandria, and thence, via the Isthmus of Suez, to the Holy City. From there, excursions are to be made to Bethlehem, Jericho, Jordan, the Dead Sea, etc., and on return, Smyrna, Athens, Sicily, and other points will be visited. The duration of the whole will be not far from months and a half.

Considerable importance is attached to the fact that the Pope's delegate in Peru—Vanutelli—has left Lima and settled at Quito, the chief town of Ecuador, where he hopes to find a more congenial soil for his Ultramontanist labors.

THE NORTH CAROLINA ELECTION.

Both parties here claim a victory in North Carolina, and the Democrats are firing guns. The Republicans to-day are rejoicing over a despatch received by the Secretary of the Interior from Collector of Internal Revenue Young, at Raleigh, dated 12 30 last night, saying, "Things look better to-night. The hasty and unreliable despatches of the Democrats are being corrected by the official returns. The Republicans are much more sanguine this morning. Smith's election to Congress in this district is now considered certain, and we think we have carried the State."

Supervisor P. W. Perry telegraphed to-day, at noon, from Raleigh to Secretary Delano: "Everything is brightening. Caldwell and the whole State ticket is elected."

TREASURY DECISIONS. In the case of small boats, ranging from three to eight tons burthen, cruising as pleasure boats on the waters of Lake Erie, and which are sailing without papers of any kind, the Secretary of the Treasury has decided that these vessels are not yachts in the eyes of the law, as they cannot be enrolled and licensed, nor are they entitled to the privileges of yachts, though used as pleasure boats, and the Collector is instructed to issue to them the proper documents for vessels of their tonnage engaged in the coasting trade.

In the case of a steamboat altered into a barge, and where the owner applied for papers and desired to change her name, the Secretary decided that the vessel was entitled to such papers as are granted to other vessels of her class and character, but Congress alone by special legislation could authorize a change of her name.

WASHINGTON, Aug. 4.

THE PRESIDENT'S RETURN. Information has been received that the President expects to return here at the close of this week.

NORTH CAROLINA REPORTS. Private telegrams continue to be received from North Carolina. Those from Democratic sources still claim the State, though by a majority reduced from former calculations. The uncertainty which prevails in the public mind prompts frequent inquiry at the several sources of information for the latest intelligence.

from General Dix.

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that what are called new suppers do not agree with us, hence a supper at bed-time looks dangerous but we find it to agree very well. The English supper consists of cold meat, pie,

HORSES.

REST AFTER MEALS.

TIME AND NUMBER OF MEALS.

PARIS

ENGLAND

ENGLISH SUPPER.

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In Edward the Third's time (1327-1377) the dinner hour was nine in the morning. A century later, in Edward the Fourth's time (1461-1483), the

nations become civilized the dinner-hour shifts into the region of the evening; and the meal becomes physico-intellectual, instead of animal. In Henry the Seventh's reign the court dined at eleven, A. M. In Cromwell's time at one, P. M. In Addison's day fashionable people dined at two, P. M., and Pope in A. D. 1740, complains of Lady Suffolk dining at four, P. M., and says, "if such doings continue he must absent himself from Marble Hall." Forty years later Fowler says four was the fashionable hour; another quarter of a century and it had advanced to five. Thus was the dinner hour waited on civilization, for as people learn that every action has a definite influence on character, they begin to understand how, even in eating and drinking, they may subordinate appetite to amiability and intelligence.

remained the hour until the time of William III (1688-1702). The entire change in the habits of the people of England which took place after the restoration of Charles II (1660) contributed to increase the lateness of the hours for everything. It became fashionable among people of rank and fortune to have breakfast in bed and to hold receptions by the bedside. The ancient habit of all the members of the household taking their meals together was abrogated. Domestic followers and retainers came to be looked upon as "servants," and were treated as strangers to the family. They were limited to certain hours for their meals, and these hours were not allowed to interfere with those of their masters. Hence, it became necessary to prepare two sets of meals in every household where there were servants—one for the latter and one for the family. This lies at the root of the modern late hours. As the apartments occupied during the day by the family must be cleaned and put in order so as to be fit to receive them when they rise in the morning, the family refrained from rising until the domestics had time to do this. Another cause of late hours has been the vastly improved lighting up of the interior of houses. Even the old wax and tallow candles were a great improvement on what went before; then came the Argand lamp and other brilliant lamps, chandeliers, and, lastly, gas, which have entirely obviated the inconvenience which our ancestors suffered from darkness. The pressure of business in large cities is another cause. This is so severe now-a-days in large cities that men engaged in professional and mercantile pursuits cannot spare time to do more than take lunch in the middle of the day, so they postpone their dinner until the close of their day's work. But still another, and, perhaps, a more potent cause than all for late dinners, is the suburban railway. In very large cities men of business are no longer, as formerly, compelled to reside near their stores or offices; they can now, by means of railways or horse-cars, be conveyed from suburban residences to their places of business in less time than it took their fathers to walk from their town houses; hence they have more time to devote to business if need be, and they retire when it is over to their families at a later hour.

Dr. of  
Dinner  
10

name  
ad!



# R.

## N CENTS PER WEEK.

one hundred guns for the victory which they claim in North Carolina.

**EXPECTED RETURN OF THE PRESIDENT.**  
President Grant is expected to return to this city on Friday next.

**THE NORTH CAROLINA ELECTION.**  
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from General Dix.

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gree with us, hence a supper at bed-time looks  
dangerous but we find it to agree very well.  
The English supper consists of cold meat, pie,

HORSES.

REST  
AFTER  
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TIME AND  
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PARIS

ENGLAND

ENGLISH  
SUPPER.

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was nine. later

**BAD "FASHIONS."**

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people learn that every  
at two, a tea at five, and a dinner at seven or  
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eight, over which he passes two hours, de  
eating and drinking, they  
fighting his palate with such dishes and  
amiability and intelligen  
compounds of soup, fish, flesh, fowl, vegeta  
ables and fruits, as the skill and ingenuity of a  
professional cook can devise, washing the  
people down with various wines, such as hook,  
the Sherry, Champagne, Sauterne and Moselle,  
but during the dinner. After it, when the dessert  
is laid, the potatoes are varied with port,  
Maderia, and claret. This is his regular daily  
breakfast; but to it must be added his irregular  
acquisitions, such as a glass of Curacao,  
or Maraschino, or hock and soda water,  
when he arrives at his club in the morning,  
to read the papers and smoke his cigar, or  
to take a hand at morning whist or billiards,  
also, a biscuit and a glass of ale or wine at  
twelve. This is pretty well for a day's di-  
gestion; and, even if moderation be ob-  
served as regards quantity, it is evident  
that the stomach is tried with too frequent  
doses and two great a variety under such a  
system. Thirty years ago, the eminent phy-  
sician, Sir Henry Holland, pointed out the  
general excess in the quantity of solid food  
taken by these fashionables in England;  
and medical men have asserted that ha-  
bitual gluttony is more injurious than ha-  
bitual excess in wine. The custom of  
domestic Europe was to have three meals  
a day—breakfast at five, dinner at twelve,  
and supper at five or six. In Germany, an  
early dinner and supper are still the rule.  
One o'clock is about the usual dinner hour,  
then and few German Courts dine later than  
three or four. In Italy and France, the  
dinner hour has not advanced beyond  
four or five. In this country, the dinner  
hour of operatives varies from twelve to  
one, of business men, from one to three  
and those who give dinner parties usual-  
ly fix the hour between five and six. But in  
England, they have approximated to the  
hours of the ancient Greeks and Romans.  
Modern London now rivals the Rome of  
Augustus, and the result is seen in the great  
increase of dyspepsia, heart disease and  
apoplexy.

away. In  
very large cities, men of business are no  
longer, as formerly, compelled to reside  
near their stores or offices; they can now,  
by means of railways or horse-cars, be con-  
veyed from suburban residences to their  
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hour.

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Hoses

to eat a little

2/1

Gr. 10  
10

Same space of paper  
for than two "slips" - without copying them.

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7/6 9



HORSES.

exercise. Everyone who <sup>or drives</sup> rides horses is aware of this fact. After a hard ride, they have to be ~~rested~~ <sup>rested</sup>. We should sit a while before we eat. The Americans are in fault here again.

REST AFTER MEALS.

We should rest a while after a meal. An old proverb says "After dinner sit a while, after breakfast, read a while, and after supper walk a mile" According to this, supper should be the lightest meal.

TIME AND NUMBER OF MEALS.

As to the time of meals, there is no rule. Two or three centuries ago, dinner in England was before noon, now it is in the evening. In Paris, <sup>except at some public institutions, as here</sup> but two meals per day are eaten, while in England, at least four are eaten.

PARIS

ENGLAND

<sup>by most people</sup> It is curious for the traveller to find that both modes agree perfectly well with him. When we eat often, we take less at each time, than if we do not eat so often. The English supper at bed-time surprises Americans. It is well known that what are called late suppers do not agree with us, hence a supper at bed-time looks dangerous but we find it to agree very well. The English supper consists of cold meat, pie,

ENGLISH SUPPER.

For Blackboard

Hygiene of Alimentation.

- 1. Manner of Eating, 2. Frequency, 3. Quantity,
- 4. Nature and Quality of Food.

1. Eat slowly, after rest, with the mind free from care.

2. Take no violent exercise, or severe study, <sup>immediately</sup> soon after dinner.

3. Eat always when hungry; but not much between regular meals. A crumb in time saves nine.

Average quantity for adult: <sup>2 1/2 pounds</sup> 40 oz. of solid food, - <sup>1 1/2 to 3 pints</sup> 2/3 vegetable; with 20 to 50 fl. oz liquid. Minimum, - 12 oz solid food daily. Maximum in Arctic climate, 20 lbs fat meat daily.

Classification of Food

- 1. Azotogenous, 2. Amylaceous, 3. Oleaginous, 4. Acidulous, 5. Saline.

6. Alkaline



OTHER MEALS OF THE ENGLISH.

bread, cheese &c. Their breakfast at about 9 o'clock consists <sup>a good deal</sup> of cold <sup>hard water</sup> meat. Lunch is taken at <sup>about</sup> 1 o'clock and dinner at from 4 to 6 o'clock.

Our tea is overlooked, or if not, the slices of bread which form it, are so thin that they hardly hold together. The reason that in England supper can be eaten at bed-time is, that a long time has elapsed since the last meal. They have dinner late and do not feel hungry at our suppertime. We take dinner early so that we get hungry about 7 o'clock. If we eat a full meal then, we do not feel hungry at bed-time; <sup>unless that be late.</sup> A general rule is to eat when we are hungry. A full meal takes four hours <sup>or more</sup> for digestion. It is often asked if we should eat between meals?

EATING BETWEEN MEALS.

If we are hungry, we should, if not, not. We should not take much between meals. In sickness, a patient very often cannot wait until meal time. In low fevers, as the typhus, the patient has to be fed every hour. It is a matter of consequence not to delay giving food to sick persons. Feeble patients often suffer from such delay. The importance of giving

End of 1st Lecture, 1873. SICK PERSONS.

or a drop  
 A crumb <sub>N</sub> in time saves nine

Case:— of a lady subject to occasional convulsions,  
 neuralgic attacks, ditto.

End of 1<sup>st</sup> Lecture, 1867.

End of 17<sup>th</sup> Lecture, 1872.



TRY.

FACETIE.

GUNSHOT WOUNDS.—The Boston Courier is responsible for the subjoined contribution to the literature of this branch of surgery:—

A wounded man in St. Louis informed the doctor that he was shot between Murphy's and the depot. The physician said he did not know precisely what parts of the human body were designated by those titles, but he had no doubt a gunshot wound in such a spot was excessively dangerous, and he recommended that the man be kept quiet while he went home and hunted around among his books to find whether Murphy's was near the heart. He has not yet returned, and the invalid, consequently, is get-

REGULARITY OF MEALS.

food to the sick is <sup>inhabited neuralgias</sup> mated, than it is <sup>hot sometimes</sup> says that the best of soup is better than clarity in the tem- important. All our being habituated.

QUANTITY OF FOOD.

nature. The next sub- of food. It varies in Arctic regions, the great

Parrish's Pharmacy is a ~~well known~~ this side of the water, and the fact shows us that a really useful work never becomes merely local in its fame. Thanks to the judicious editing of Mr. Wiegand, the posthumous edition of "Parrish" has been saved to the public with all the mature experience of its author, and perhaps none the worse for a dash of new blood.—London Pharm. Journal, Oct. 17, 1874.

ESQUIMAUX.

Food makes heat, and <sup>climates</sup> there, a large amount Carbo-hydrogens espec-

LARY—New Edition—Just Issued.

FORMULARY.

inal and other Remedies. The whole adapted by ROBERT E. GRIFFITH, M.D., etc. Third edition, revised, by JOHN M. MAISEH, Prof. of Materia Medica. In one large and handsome octavo volume, \$5 50.

BULIMIA.

is said that four <sup>for dinner</sup> sheep and that sometimes 20 lbs of fat <sup>meat</sup> are eaten. About 10 lbs is their usual allowance, tallow candles &c. being thrown in. In the disease called bulimia there is an excessive

MIN. AM'T. IN ARCTIC REGIONS.

appetite. <sup>Says</sup> A boy ate 64 lbs of food per day for six days. In Arctic regions, the minimum amount of food as reported by Capt. Parry, is 20 oz. solid food, 10 being of biscuit, 1 of cocoa and 9 of meat. (The maximum is about 20 lbs)

Dr. Jarvis speaks of a certain woman who

Dr. Br. Séq. treats (1873) dyspepsia  
by feeding with small am'ts of nutritious  
substances every 10, 20, 30 minutes! for BOS

Dr. Brown-Séquad considers that the facts observed under this treatment confirm "the view that we are naturally organized, like most, if not all animals, to eat very frequently, and not, as we do, two, three, or four times a day;" and that "functional dyspepsia, when once it has begun (never mind by what cause), is kept up and increased by distention of the walls of the stomach." It might be supposed that there would be trouble from the distention of the stomach on the return to the ordinary system of meals, after several weeks of the treatment described, but in no case has he found this to occur.

time saved nine

occasional convulsions,  
attacks, ditto.

1867.

End of 17<sup>th</sup> Lecture, 1872.



3. WIEGAND.

ages, with 280 illustrations: cloth, \$5 50; \$6 50.

J. S. Pharmacopœia, and the sudden death of this new edition beyond the period expected. It has been placed in the hands of the editor, to embody in the work all the improvements introduced during the last ten years. It is therefore to maintain the reputation which the volume has had and work of reference for all engaged in the

heartily recommend the work, not only to pharmacists, but also to the multitude of medical practitioners who are obliged to compound their own medicines. It will ever hold an honored place on our own book-shelves.—*Dublin Med. Press and Circular*, Aug. 12, 1874.

With these few remarks we heartily commend the work, and have no doubt that it will maintain its old reputation as a text-book for the student, and a work of reference for the more experienced physician and pharmacist.—*Chicago Med. Examiner*, June 15, 1874.

Perhaps one, if not the most important book upon pharmacy, which has appeared in the English language, has emanated from the transatlantic press. "Parrish's Pharmacy" is a well-known work on this side of the water, and the fact shows us that a really useful work never becomes merely local in its fame. Thanks to the judicious editing of Mr. Wiegand, the posthumous edition of "Parrish" has been saved to the public with all the mature experience of its author, and perhaps none the worse for a dash of new blood.—*London Pharm. Journal*, Oct. 17, 1874.

LARY—New Edition—Just Issued.

FORMULARY.

inal and other Remedies. The whole adapted by ROBERT E. GRIFFITH, M.D., etc. Third edition, revised and corrected, by JOHN M. MAISCH, Prof. of Materia Medica. In one large and handsome octavo volume, \$5 50.

Pharmacopœias. Much obsolete matter has been

food to the sick is not estimated, than it was formerly. <sup>in habitual neuralgias</sup> says that <sup>the</sup> best anodyne of <sup>hot</sup> soup is better than a variety in the time of <sup>sometimes</sup> being important. All our organs being habituated. The nature of food. It varies in Arctic regions, the great

Food makes heat, and <sup>they</sup> a large amount

Carbo-hydrogens, especially is said that four

sheep <sup>and</sup> that sometimes 20 lbs of fat <sup>meat</sup> are eaten. About 10 lbs is their usual allowance, tallow candles &c. being thrown in. In the

disease called bulimia there is an excessive appetite. <sup>Says</sup> A boy <sup>says</sup> ate 64 lbs of food, per day for six days.

In Arctic regions, the minimum amount of food as reported by Capt. Parry, is 20 oz. solid food, 10 being of biscuit, 1 of cocoa and 9 of meat. (The maximum is about 20 lbs)

Dr. Jarvis speaks of a certain woman, who

REGULARITY OF MEALS.

QUANTITY OF FOOD.

ESQUIMAUX.

BULIMIA.

MIN. AM'T. IN ARCTIC REGIONS.

As reported by Dr. Jarvis

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Dr. P. Ség. treats (1873) dyspepsia  
by feeding with small amounts of nutritious  
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Case of Bulimia.—Dr. LUBELSKI, of  
Warsaw, has forwarded to the Paris  
Académie de Médecine the particulars  
of a remarkable case of bulimia occur-  
ring in a woman twenty-six years of age,  
usually enjoying good health. She had  
been married but two months when she  
was seized suddenly with nervous symp-  
toms, which were at first attributed to  
probable pregnancy. But at the same  
time came on an insatiable appetite and  
devouring hunger, so that the woman  
would eat from fourteen to sixteen pounds  
(Russian?) of meat daily. Neither sugar  
nor albumen were found in the urine.  
She grew enormously fat, so that she be-  
came unable to walk, and weighing about  
250 lbs. All known therapeutical agents  
were tried in vain, and it was found that  
there was quite an abnormal tolerance of  
poisonous substances. Neither tania  
nor any other form of helminthiasis ex-  
isted, nor, indeed, any pathological con-  
dition which offered a clue for treatment,  
although the occurrence of convulsive  
paroxysms when she was not supplied  
with food seemed to indicate some kind  
of nervous affection. M. Lubelski, wish-  
ing to have the opinion of the Academy  
on the nature of the case and the treat-  
ment to be pursued, a committee was ap-  
pointed to report upon it, consisting of  
MM. Béclard, Personne, and Vulpian.—  
*Med. Times and Gaz.*, June 12, 1875.

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time sans mine

occasional convulsions,  
attacks, ditto.

1867.

Lecture, 1872.



food to the sick is now more properly esti-  
 mated, than it was formerly. Dr. Astruc  
 says that <sup>in habitual neuralgias</sup> the best anodyne <sup>often</sup> is food, that a bowl  
 of <sup>hot</sup> soup is <sup>sometimes</sup> better than a grain of opium. Reg-  
 ularity in the time of taking our meals, is  
 important. All our organs are capable of  
 being habituated. Habit is, with us, a second

REGULARITY  
OF  
MEALS.

QUANTITY  
OF  
FOOD.

nature. The next subject is the quantity  
 of food. It varies in different <sup>parts of the world</sup> places. In the  
 Arctic regions, the greatest amount is eaten.

ESQUIMAUX.

Food makes heat, and as it is <sup>in</sup> very cold  
<sup>climates</sup> there, a large amount of food is necessary.

Carbo-hydrogens especially are wanted. It  
 is said that four Esquimaux will eat a  
 sheep <sup>for dinner</sup> and that sometimes 20 lbs of fat <sup>meat</sup> are  
 eaten. About 10 lbs is their usual allowance,  
 tallow candles &c. being thrown in. In the

BULIMIA.

disease called bulimia there is an excessive  
 appetite. <sup>Dr. Jarvis says</sup> A boy ate 64 lbs of food per day for

MIN. AM'T.  
IN  
ARCTIC  
REGIONS.

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Dr. Jarvis

speaks of a certain woman who

⊕ Bread,  
 Soup,  
 Yolks of eggs  
 and meat

↳ "Starvation cases", deceptions: one  
 1870, in England, fatal when watched.

Dr Tanner  
 1880 40 days  
 only water.

⊕ Letheby says, -

Carbon 4005 grains  
 Nitrogen 184 " } idle

Carbon 5791 " } at  
 Nitrogen 302 " } steady  
 work.

Carbon 4500 mth } fair average  
 Nitrogen 250 }



Mr. Naughton of Albany tells of Reuben Kealey, whose sole drink food was water for 53 days; for six weeks he walked out every day. Got up at bed till the day of his death. (Transactions of Albany Institute, 1830).

Big. Lay's similar, but shorter term; 3 weeks? without food, comfortable. see after he returns

little the 16th a book it food com- years would of wine h. he her It-

CORNARO.

did not recover for a <sup>month in Cornaro's book</sup> <sup>daily</sup> <sup>280 oz.</sup> of food, and lived over 70 yrs. These are extreme cases. The average consumption is about 40 oz. of solid food <sup>1/3 of it vegetable;</sup> and 20 <sup>sometimes 50</sup> <sup>30 oz.</sup> of liquid. Dr. Dalton states the following to be the average consumption: <sup>1 lb</sup> 16 oz. meat, <sup>1 1/4 lb</sup> 19 oz. bread, <sup>4 1/2 lb</sup> 3 1/2 oz. fat, and <sup>3 1/2 lb</sup> 52 oz. water. Dr. Parke gives the following statement. An average man should eat from 22 to 23 oz. of water-free food when not under exertion; 30 oz when under exertion. The amount of nitrogen should be 250-350 <sup>300</sup> grs; carbon 3500-5000 <sup>4500</sup> grs; salts, 400 grs; water, 98.00 oz; carbo-hydrogens, 14 1/4 oz. ♀

AVERAGE

MINIMUM

Dr. DALTON'S STATEMENT

Dr. PARKES.

This is a <sup>(R. Willis on Sustains. & Support. System)</sup>  
 Boston, said by a highly respectable  
 English author, Dr Robt. Willis, to be  
 well-authenticated, of the master of a water-  
 logged ship, who survived 28 days  
 without any solid food, with no drink  
 except rain water gathered in the palm of  
 his hand as it tricked down the mast.  
 He was much exposed to the spray of the  
 sea, - His thick clothing almost constantly saturated.

⊕ Bread,  
 Soup,  
 Yolks of eggs  
 and meat

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CORNARO.

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22 to 23oz. of water-free food when not under  
exertion; 30oz when under exertion. The an-

amount of nitrogen should be 250-<sup>300</sup> 350 grs;  
carbon 3500-<sup>4500</sup> 5000 grs; salts, 400 grs; water,  
98.00 oz; carbo-hydrogens, 14 1/4 oz.  $\phi$

Captain Kopken of the brig  
 Shelephof, was taken alive from  
 the wreck of his vessel Oct. 19<sup>th</sup> 1771,  
 he has been there since the disabling  
 July 3<sup>d</sup>, (almost) all that time  
 without food. He had weighed  
 235 lbs; when found, 120 lbs.  
 all but he had perished.  
 His case was watched.

⊕ Bread,  
 soup,  
 yolks of eggs  
 and meat

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 Nitrogen 250 }



CORNARO.

for four years lived on nothing but a little water per day. ~~Cornaro~~, an Italian of the 16th century, who lived <sup>many</sup> 100 years and wrote a book on "How to Live Long"; ate 12 oz. of solid food and 14 oz. of light wine per day. He commenced this diet when he was eighty years old. His friends were afraid that he would injure himself, so to please them he ~~one~~ day took 14 oz. of solid food, and 16 oz. of wine. The result was a sickness from which he did not recover for a month. Another Italian <sup>in Cornaro's book</sup> took <sup>daily</sup> 28 oz. of food, and lived over 70 yrs. These are extreme cases. The average

AVERAGE

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(3) French Navy — daily,  $2\frac{1}{4}$  grammes (less than  $\frac{1}{4}$  lb) meat; <sup>12</sup> like a week, 3.3 lbs animal food (beef, bacon & cheese), & 16.5 lbs veg, subst., (beans, peas & rice.)

U.S. Navy,  
each week,  
 $6\frac{1}{2}$  lbs animal food  
(beef, pork &  
preserved meats)  
11 lbs vegetables  
(beans, rice, flour,  
dried fruit, desic-  
cated potatoes, &  
mixed vegetables)  
with liberal allowance  
of sugar, molasses,  
onions & pickles.

(2)  
German army ration, 1871,  
 $\frac{3}{4}$  pound fresh or salt meat,  
 $3\frac{3}{4}$  oz. rice or grit,  
 $7\frac{1}{2}$  oz. peas or meal or  
3 pounds pearl barley,  
 $\frac{3}{4}$  oz. of salt  
 $\frac{3}{4}$  oz. coffee  
 $\frac{1}{8}$  litre of brandy or  
 $\frac{1}{2}$  litre wine, &  
5 cigars!



DIETARIES.

In many houses, diet are allowed 140 oz. It is that, the 140 oz. per bread and allowed.

ENGLISH ARMY

U.S. ARMY.

LABOR MENTAL OR PHYSICAL

larger <sup>or</sup> ~~larger~~ <sup>or</sup> economy to exercise, an increase the greater concentrate

SICKNESS

acute diseases in

In chronic disease as in consumption, this does not so often happen. Some consumptives have <sup>almost</sup> as good appetites as healthy persons.

CONVALESCENCE

<sup>Symptom</sup> Some cancerous patients <sup>Worms may destroy</sup> the appetite is often unusually large. This is always a sure sign of recovery. The convalescent <sup>does best to</sup> eat frequently rather than in <sup>very</sup> large quantities. Sometimes

CHLOROSIS.

we meet with a perverted appetite as in chlorotic females. They will eat slate pencils

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The men  
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sical, demands  
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(13) French Navy — daily, 2 1/4 grammes (less than 1 lb) meat; <sup>12</sup> like a week, 3.3 lbs animal food (beef, bacon & cheese), & 16.5 lbs veg, tubat., beans, peas &

U.S. Navy  
each week,  
6 1/2 lbs animal food  
(beef, pork & preserved meats)  
11 lbs vegetable  
(beans, rice, flour, dried fruit, desiccated potatoes, & mixed vegetables)  
with liberal allowance of sugar, molasses, vinegar & pickles

An average man (70 kilograms weight) in repose excretes daily 24 to 30 grammes of urea: exhalates 216 grammes of carbon; & needs 21 grammes of nitrogen. For the utilization of all the nitrogen of food, the animal must have enough carbon supplied. See.

(2) German Army ration, 1871,  
3/4 pound fresh or salt meat,  
3 3/4 oz. rice or grit,  
7 1/2 oz. peas or meal or  
3 pounds pearl barley,  
3/4 oz. of salt  
3/4 oz. coffee  
1/8 litre of brandy or  
2 litres wine, &  
Cigars!



Will Please Call and Receive Their

BONDS.

JAY COOKE & CO.,

114 SOUTH THIRD STREET.

STOCKS AND SECURITIES

BOUGHT AND SOLD

ON COMMISSION.

DE HAVEN & BRO.

20 SOUTH THIRD STREET.

DIETARIES.

In many places, dietary houses, dietary are allowed

ENGLISH ARMY

140 oz. It is

that, the English

140 oz. per week

bread and  $\frac{1}{4}$

U.S. ARMY.

allowed. In

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LABOR MENTAL OR PHYSICAL

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CHLOROSIS.

Sometimes we meet with a perverted appetite as in chlorotic females.

They will eat slate pencils

fish work

The men & the women permanently.

laborer gets h army, 1 lb.

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(3) Frank Navy - daily, 2 1/4 grammes (less than 1/4 lb) meat; 12 a week, 3.3 lbs animal food (beef, pork & cheese), & 16.5 lbs veg. subst.,

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U.S. Navy

each week,

6 1/2 lbs animal food

(beef, pork & preserved meats)

11 lbs vegetable

(beans, rice, flour)

dried fruit, de-

hydrated potatoes,

mixed vegetables

with liberal allowance

of sugar, molasses

vinegar & pickles

The army ration, provided by law for daily issue to each soldier, is larger than that issued in any other army of the world—of the best quality, and more than sufficient for the subsistence of the men.

The daily allowance per man is:

- 12 oz. pork or bacon, or
- 20 oz. salt or fresh beef.
- 22 oz. flour or soft bread, or
- 1 lb. hard bread, or
- 20 oz. corn meal.
- 15 lbs. peas or beans, and
- 10 lbs. rice or hominy to every 100 rations.
- 10 lbs. coffee, or
- 22 oz. tea to every 100 rations.
- 15 lbs. sugar,
- 4 qts. vinegar,
- 22 oz. candles,
- 4 lbs. soap,
- 3 lbs. 12 oz. salt
- 4 oz. pepper,
- 30 lbs. potatoes,
- 1 qt. molasses,

To every 100 rations.

The above ration is due each soldier, and in our large general hospitals, where it cannot be consumed, the whole amount due all the sick and wounded, each month, is passed to the credit of the hospital money, and the portion actually drawn from the issuing commissary charged to the hospital, thus leaving to the credit of the institution a large amount in

of  
& me  
of food  
Carbon

(2) German army ration, 1871,

3/4 pound fresh or salt meat,

3 3/4 oz. rice or grit,

7 1/2 oz. peas or meal or

3 pounds pearl barley,

3/4 oz. of salt

3/16 oz. coffee

1/8 litre of brandy or

1/2 litre wine, &

5 cigars!



DIETARIES.

In many places, as in the British work houses, dieteries are established. The men are allowed 179 oz. per week, and the women 140 oz. It is stated, probably erroneously,

ENGLISH ARMY

that, the English agricultural laborer gets 140 oz. per week. In the British army, 1 lb. bread and 1/4 lb. meat (196 oz. per week) are allowed.

U.S. ARMY.

In our army the amount is much larger being 266 oz. per week. It is the best economy to feed an army well.

LABOR MENTAL OR PHYSICAL.

Labor or exercise, either mental or physical, demands an increase of food. Physical labor causes the greater demand. Brain-work requires more concentrated food.

SICKNESS

In sickness, especially in acute diseases the appetite is diminished. In chronic disease as in consumption, this does not so often happen. Some consumptives have almost as good appetites as healthy persons.

CONVALESCENCE

In convalescence the appetite is often unusually large. This is always a sure sign of recovery. The convalescent eats frequently rather than in very large quantities. Sometimes we meet with a perverted appetite as in chlorotic females. They will eat slate pencils

CHLOROSIS.

Some cancerous patients worms may destroy appetite.

When deprived of sleep, -- as in watching with the sick,  
 a little extra food lessens exhaustion. Nurses should  
 always be considered in this & physicians should  
 consider themselves, & ask for food at such times.

6<sup>th</sup> must not be offensive to taste or smell.



and other earthy substances. Perhaps there is some error in the blood which requires this to overcome it.

WHEN TO STOP EATING.

It is a matter of importance to know when to stop eating: We should stop as soon as hunger is appeased. We should not eat until we can eat no more. If we can feel our dinner we may know that we have eaten too much; for, in health, the stomach has no feeling. It only has feeling when it is out of order, or when we eat too much or what does not agree with us.

The next subject is the nature and quality of food. There are six

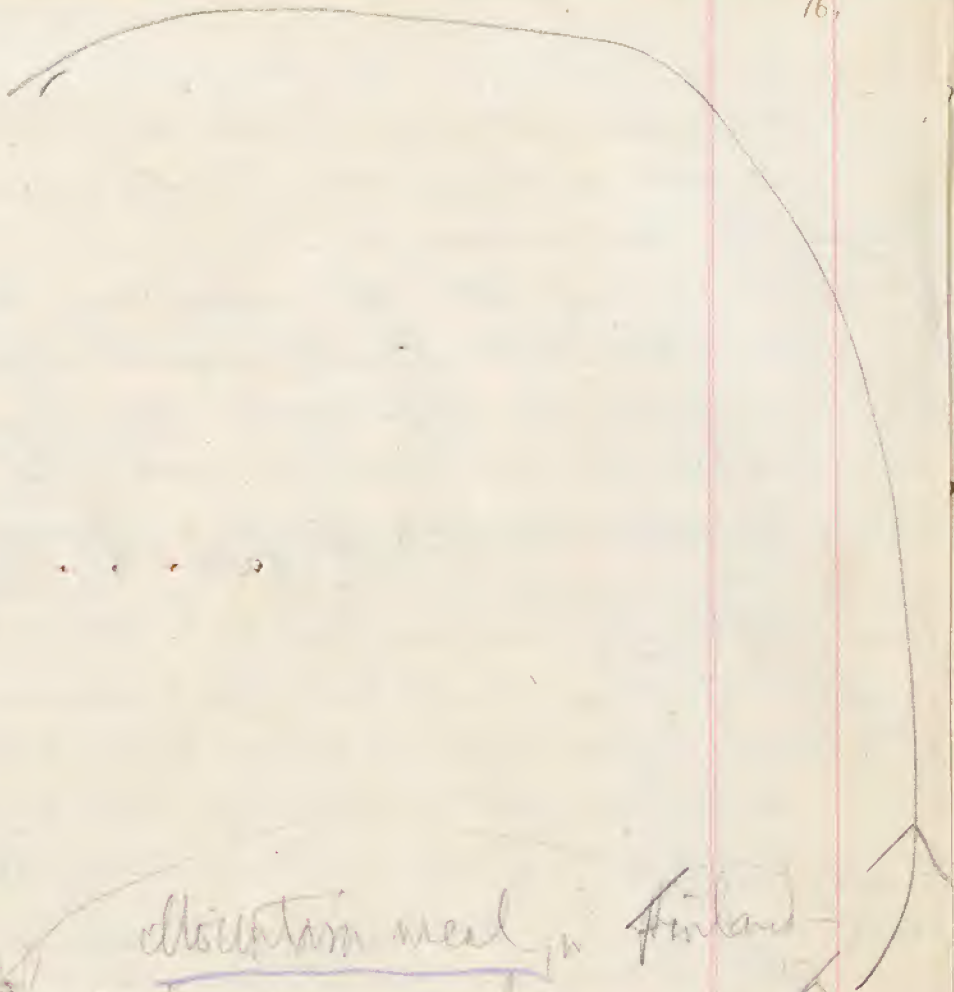
REQUISITES OF FOOD.

Requisites of Food.

- 1st. Must Contain <sup>some</sup> Elements of the Body,
- 2nd. Must be Organic, (except water and salt.)
- 3rd. Must be Mechanically Reducible.
- 4th. Must be Soluble by the Digestive Fluids.
- 5th. Must Contain Nothing Poisonous.

Although glass contains silicon, an element of the body, yet it is not food because it cannot be reduced to a pulp. <sup>neither is lime, nor charcoal</sup> The body has <sup>four</sup> ultimate elements, carbon, hydrogen,

ELEMENTS OF BODY.



disruption meal in Finland  
hundreds of way-borders a year.



oxygen and nitrogen; besides Sulphur, phosphorus, chlorine, calcium, sodium, silicon, potassium, fluorine, <sup>iron</sup> Iron, <sup>many acids</sup> (magnesium, Aluminium) (copper) (These are found in small quantities)

DIRT EATERS.

OTTOMAKA.

Some people eat dirt. This is apparently a contradiction to the statement that food must be organic. The Ottomack Indians of South America live for a long time on <sup>about</sup> a pound of dirt per day.

DIGGER INDIANS.

The Digger Indians of <sup>western</sup> North America eat dirt.

FLORIDA

In some of our southern states as Florida, dirt is <sup>sometimes</sup> eaten. A gentleman <sup>me</sup> sent <sup>from Georgia</sup> a larva which a patient had vomited.

SWEDES.

Dr. Feidy examined it and found it to be the larva of the church-yard beetle. It had been eaten in dirt. In Sweden, the poor often eat dirt. Retzius found that the earth so eaten contains much organic matter, many infusoria.

CLASSIFICATION OF FOOD

This is what makes it support life at all. The dirt-eaters are weak, pot-bellied, unhealthy people. Food is <sup>best</sup> classified into: <sup>according to the composition</sup> nitrogenous as the lean part of meat, oleaginous as olive oil or fat, amylaceous as starch or sugar, acidulous: & saline. — Aqueous.

Force-food.  
 X McDonnell's theory of glycosis of  
 liver, uniting with nitrogen of food & blood  
 to make  $C, H, O, N$ , tissue; - instead of this, in  
 diabetes, the glycose forms sugar, & the tissue fails & so wastes.

also:

Pick & Washburn, & Huxley & Westcott

Force-food mainly is carbo-hydrogenous.  
 Albumen & Gelatin are sometimes so also.

See left page next Piccard.

Frankland has by chemical experiments (combustion)  
 & calculations confirmed this view.

Force-food in some animals bears a very large proportion to  
 tissue food. - A young robin, it has been shown, eats in 24 hours nearly ~~the~~  
~~once~~ once and a half its own weight of food, with very much  
 less than that amount of increase of weight. This is mostly nitrog. animal food  
 (Larva & mago bitonic of the contracta) for tissue & force.



LIEBIG'S CLASSIFICATION

Liebig classifies food according to its use, into Plastic or tissue food and calorific or heat and force making food. This classification needs some modification. The two are often mixed. No food is exclusively one or the other.

NITROGENOUS FOOD.

We will first consider nitrogenous food. It occurs in both animals and vegetables, as the lean of meat, and wheat. While here, we will discuss the theory of the vegetarians.

VEGETARIANISM.

They think all <sup>meat</sup> should be abolished.

They say that vegetables have all the elements of the body; not only this, but that they have ~~the~~ <sup>approximate</sup> proximate principles to the principles in our bodies. They have vegetable albumen, corresponding to the albumen of the body; gluten corresponding to <sup>myosin</sup> ~~protein~~; legumin, corresponding to casein.

PROXIMATE PRINCIPLES.

So near

Since these proximate principles are identical, vegetarians say there is no need of animal food. <sup>But</sup> There is a difference between these proximate principles.

Animal and vegetable albumen are not exactly the same. They are isomeric but not identical; just as is the case with oxygen and ozone. They are not exactly the same. Approximate

OZONE.

from last page -

Piccard says the Chamor's hunters of the Alps, when going on journeys that involve much exposure, take with them only bacon fat and sugar - as most sustaining with least bulk.

~~W. J. Adams~~



STRUCTURE  
OF  
ORGANS.

If we examine the structure of the organs used for food we <sup>lead us</sup> ~~bring~~ <sup>to</sup> the true conclusion respecting what food we should eat. We will first examine the teeth. The carnivora have incisors and canines. They live on flesh.

TEETH.

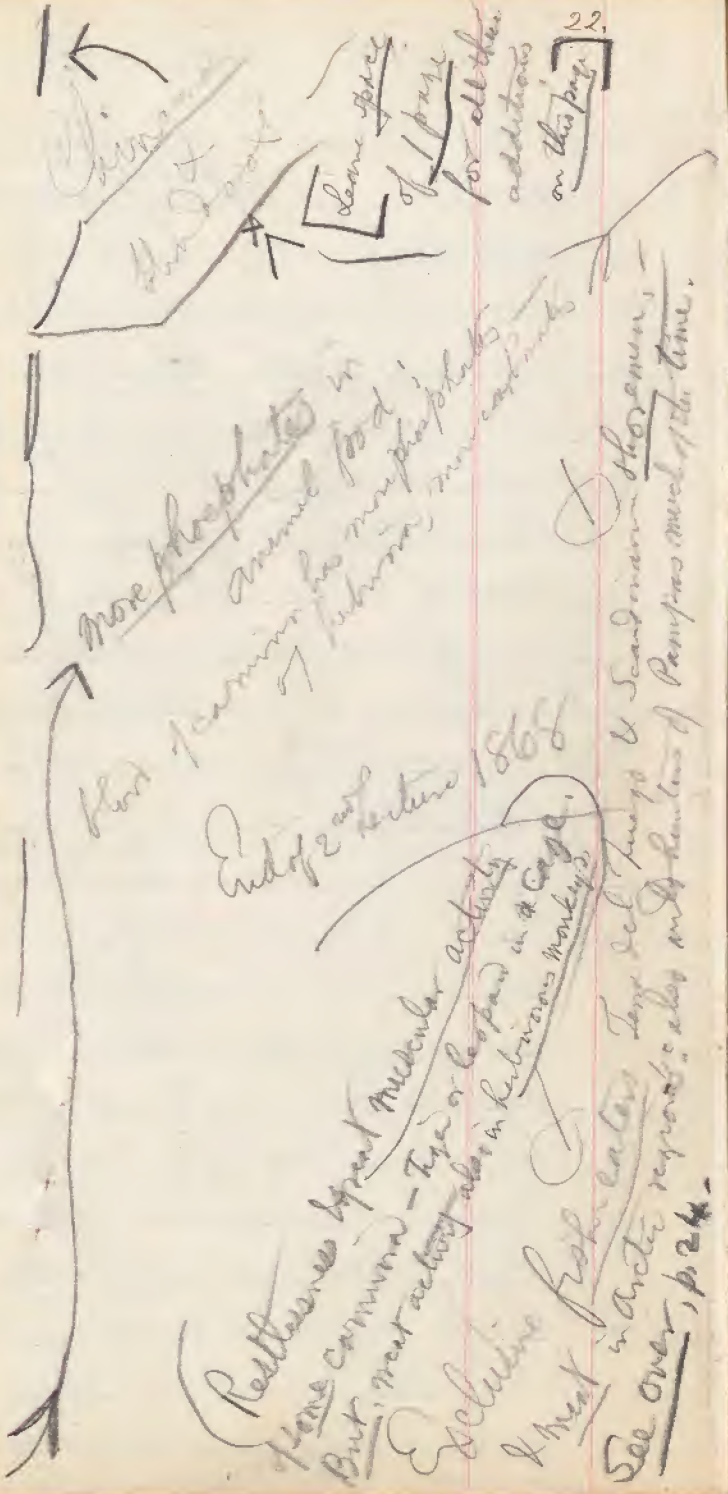
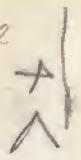
Ruminants, living on vegetables have molars and incisors but <sup>almost all of them</sup> no canines. Man is between the two, having all three kinds. This plainly points to him as omnivorous. Unfortunately for this theory, a certain monkeys, <sup>except a few species</sup> which live

AN EXCEPTION.

<sup>almost entirely</sup> only on vegetables, have even more prominent canines than man. The next organ to con-

DIGESTIVE  
ORGANS.

<sup>cern</sup> ~~the~~ <sup>are</sup> the digestive organs. Herbivorous animals, as the sheep, deer and camel, have four stomachs and long alimentary canals. The carnivora have simple stomachs and short canals. Vegetable food is bulky and requires an elaborate process. The alimentary canal of the sheep is <sup>about</sup> 28 times the length of the body; that of the lion is three times and that of man six times. The stomach of the horse is small, being an exception, but still the canal is long. The position which man holds in this <sup>respect</sup> distinction seems to show what food he is destined to eat.





Little ghee (clarified butter)  
 Loaf of curry, a heavy  
 35 miles a day continue  
 fatigue. " Stewart Clark m.  
 of the Army a Indian

VEGETABLE EATERS

MEAT EATERS

A person of vigorous health, in a good atmosphere, doing intensive work, and with plain food can do without medicine lives in the city, cannot

ALIMENTARY

PRINCIPLES

- Lecture  
 [Postpone] Alimentary
1. Nitrogenous — Ch
  2. Oleaginous — Ch
  3. Amylaceous — Ch
  4. Acidulous
  5. Saline
  6. Aqueous, Nutritive Niti

NUTRITIVE PRINCIPLES

- Albumen — Vegetable  
 Syntonin — Glycerin  
 Gelatin — Gluten  
 Casein — Legumin.
- (See 32, 40 & 74)

solu- read lock, rendering crossing for pedes- trians next to impossible, save at long intervals. Much vexation, much loss of time, and much profanity (I am sorry to add), are the result. Not only that, but the company kept their laborers at work all day yesterday (Sunday) in front of St. Paul's Church, to the great annoyance of the worshippers there. This circumstance has given rise a momentum to the Sabbath Observance Association, who are again thinking of reviving legal proceedings, with a view to stopping all the cars from running on the Sabbath. The jam in Broadway, occasioned by this new link in the railroad chain, will also revive the clamor for the widening of Ann street, as the only available measure of relief.

I have spoken of Old St. Paul's. There, this afternoon, they are continuing the interesting centennial services commenced yesterday, and of which I had something to say, by way of explanation, in my letter of Saturday. The most noteworthy feature was an address by the rector, Rev. Dr. Dix, giving an historical sketch of the parish, from its origin to the present time. The congregation was quite numerous.

The most interesting local political movement to-day is the reunion of the King's county Democracy, who have been for a long time past running separate machines, to the great advantage of the Republicans. Both factions have now united on one and the same county ticket, and it is probable, therefore, that they will elect it by a heavy majority.

The Health Inspector reports 409 deaths in this city last week, a decrease of 68 compared with the mortality of the week previous. There were but three deaths from cholera. The mortality from typhus fever shows a gratifying decrease. On the whole, the health of the city now is about as favorable as it ever was known to be.

The Jews are rapidly multiplying their places of public worship here. To-morrow noon they are to lay the corner-stone of the Temple Emanu-El, at the corner of Fifty-third street and Fifth avenue. This is in the most aristocratic part of the city, and the edifice will be one of the most costly on the island.

A diamond pin valued at six thousand dollars was lost on Broad street to-day, and afterward found by a poor telegraph messenger-boy, to whom the owner of the pin gave a check for \$500.

Money was in fair demand this morning, but without variation in rates. Call loans 4 a 5 per cent.; discounts, 3 a 6. The Bank Statement of a epitomized below is accepted as foreshadowing a still easier market:

Loans	..... \$29,136,793	\$24,790,463	Dec. \$4,411,311
Specie	..... 7,371,487	7,843,239	Inc. 476,752
Circulation	..... 30,415,240	27,43,487	Inc. 171,800
Deposits	..... 225,083,862	223,810,672	Dec. 1,243,220
Legal tender	..... 73,625,429	78,014,925	Dec. 690,500
Clearings for week end	Oct. 29, 1880	\$821,721,943	
do.	do. Oct. 27, 1880	762,226,491	
Balances	do. Oct. 29, 1880	27,104,211	
do.	do. Oct. 27, 1880	26,437,792	

Foreign exchange continues firm. Prime bankers', 60 days, 109%; prime bankers', sight, 110%; Paris, bankers', long, 5f. 13%; do. short, 5f. 11%; Antwerp, 5f. 20; Hamburg, 36%; Frankfort, 41%.

Gold is rather unsteady. The premium is 10 A. M. stood at 145; 11 A. M., 146%; 1 1/2 P. M., 146%; noon, 146%; 1 P. M., 146%; 2 P. M., 146%; 3 P. M., 146%; 4 P. M., 146%. Cash gold was loaned at 1-32 per cent. premium.

The speculative feeling in the stock market was less perceptible this morning than for some time past. The most exciting feature was Pacific Mail, which went up 9 per cent. as compared with Saturday's price. Rock Island was active. The sales at the Board were nearly 3000 shares at 109 a 109 1/2. At and Terre Haute was 4 per cent., and Governments from 1/2 to 1/4, but most other kinds were lower.

Later in the day, Governments were quiet but firm. The following are the closing prices registered, 1881, 113 1/2 a 115%; Coupons, 188, 113 1/2 a 114; 5-20 Registered, 1882, 106 a 106 1/2; 5-20 Coupons, 1882, 114 1/2 a 114 1/2; 5-20 coupons, 1881, 110 1/2 a 110 1/2; 5-20 do., 1886, 111 a 111 1/2.

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1873.

Postpone

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"The Scotch Highlander is able to walk from 50 to 60 miles a day on his native hills, and he will forego a dish of porridge & a piece of oatmeal cake, and thus chiefly on account of the purity of the air in which his life has been passed. He has a palatable soup, who lives and in the open air and has never more than 2 meals a day (he often eats more than two), consists of chip potatoes (unboiled cakes) &c

always lived on the simplest vegetable fare—oatmeal, converted into cakes and porridge, to which, of late years, potatoes are added, and the whole eked out with a little barley broth, and in the morning and evening with a medium of milk & butter, but these last articles are often wanting. The traveller, at the table of his landlord or wealthy host, will have an opportunity of enjoying the exquisite flavor of the mutton of the Grampian or Cheviot Hills, but the people at large are strangers to this kind of aliment. They can speak more knowingly of their national dish, *haggis*—a mixture of oatmeal, fat, liver and onions, boiled up in a bag, which was once the stomach of the animal.

If the peasantry of Italy consume little animal food, those of Spain and Portugal consume still less. The chief subsistence of the people of the first-mentioned country is bread of Indian corn, or of wheat, or rice, or chestnuts, according to the region. Chestnuts constitute the chief aliment of the inhabitants of the Apennine regions; the flour from this fruit is rich and sweet and keeps well. The subsistence of the people of Spain is chiefly derived from wheat and other grains, and vegetable substances, to which oil is freely added. Salted and dried fish is, however, consumed by them in considerable quantity, and garlic is a favorite condiment. *See also Volcanic Islands.*

Were we to sum up what might be said of the dietetic regimen of the people of Europe, it would show that those of the northern and central portion of that continent, including Scandinavia, Russia, Germany, Holland, Belgium and France, subsist, in great part, on vegetable food, and thus of the second or inferior of the cereal grains, viz: rye, seasoned with the products of the dairy and a small portion of meat or fish. We say *seasoned*, for the occasional use of animal food makes it the exception rather than the rule in their national dietetics. Among the people of Southern Europe there is a great simplicity in their food, but maize to a great extent takes the place of rye, and wheat is used in greater proportion than it is in the north.

more than  
 food of animals  
 End of 2nd lecture 1868

Restlessness & great muscular activity  
 But, not common - Tiger or leopard in the cage.  
 Excessive fresh meat in Subarctic monkeys.  
 I must fresh meat in Arctic regions also and a quantity of Pommes meat of the time.  
 See over, p. 24.

Scandinavian, those men, -  
 Pommes meat of the time.



The young of birds which are partly granivorous when grown, eat worms & grubs brought to them by the parent; all animal food.

alone.

VEGETABLE EATERS.

MEAT EATERS.

The question cannot be answered physiologically. Experience is <sup>the</sup> true teacher. Vegetarians say that whole races never eat meat. This is true but such people are not vigorous. <sup>Salubrious</sup> On the other hand, there are whole races, as the Esquimaux and the inhabitants of the Pampas in South America, who eat only meat.

A person of vigorous constitution, in good health, in a good atmosphere, with no excessive work, and with <sup>plenty of</sup> ~~very~~ good vegetable food can do without meat; but a person who lives in the city, cannot, generally, do well.

End of 2<sup>nd</sup> Lecture, 1873.

Lecture III.

ALIMENTARY PRINCIPLES

[Postpone]

Alimentary Principles

- 1. Nitrogenous — Chiefly Plastic.
- 2. Oleaginous
- 3. Amylaceous — Chiefly Dynamic.
- 4. Acidulous
- 5. Saline
- 6. Aqueous.

Postpone

NUTRITIVE PRINCIPLES

Nutritive Nitrogenous Principles.

- Albumen — Vegetable Albumen. Neurin.
- ~~Synterin~~ — ~~Glutin. Syngin~~ Hamatin. ~~Albumin~~
- ~~Fibrin~~ — ~~Gluten~~ Elastin. ~~Chondrin~~
- Cassin. Legumen. Lactin. ~~Chondrin~~

(See pp 40 & 74)

Mother's milk always best for infants, - if the  
mother is healthy, or least; if not, wet-nurse; last the  
latter. Absence of nurses in France are fearful.

*Mother's milk*

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NATURE PROVIDES ANIMAL FOOD.

CRUELTY.

Hygiene

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books  
with  
quity.

### HAVERFORD COLLEGE.

### The Managers of Haverford

Hygiene

CHILD'S DIET

GUILLOT'S CONCLUSIONS.

under 1 year

SICK DIET.

As nature furnishes milk to the child, we might conclude that meat is the best food for it. But ~~experience shows~~ <sup>commonly</sup> that they get less than adults. Vigorous children can get along well without meat. Feeble children cannot do without ~~it~~. <sup>for time to time</sup> Guillet, <sup>a Frenchman</sup>, weighed infants and came to the conclusion that <sup>needs to</sup> an infant consumes  $2\frac{1}{4}$  lbs per day <sup>of milk</sup>. Feeble infants require animal food. It is a mistake to make feeble <sup>them</sup> infants live on vegetable food. They often require very concentrated food. Sometimes infants who can eat nothing else, can be kept alive on beef tea. — The diet of the sick is classified into low and full diet.

Barber & D.C. most make it from that to 3 1/2 pounds or pinty-

In a French industrial establishment, employing 630 men, mostly vegetarians, the sick fund was constantly in debt. The director introduced butcher's meat into the food of the men; and thereafter the average loss of time for the men fell from 15 to 3 days per annum; saving 12 work-days for each man in the year.

Mother's milk always best for infants, - if the mother is healthy, or best; if not, wet-nurse; last the bottle. Absence of nurses in France are fearful.



NATURE PROVIDES ANIMAL FOOD.

An argument of force, against vegetarians, is that nature provides the infant with animal food.

CRUELTY.

Milk is an animal substance. ~~Vegetarians~~ also object to meat, <sup>on the ground that</sup> because it is cruel to kill animals.

Redeem

This is a very ~~weak~~ objection. We find from the Bible and from the early traces of animal existence, that the beasts were intended to prey on <sup>one another</sup> each other. ~~In Hugh Miller's books~~ <sup>mention is made</sup> of bones being found, with the marks of teeth on them, of very great antiquity.

CHILD'S DIET

As nature furnishes milk to the child, we ~~might~~ conclude that meat is the best food for it.

But ~~experience shows~~ <sup>commonly</sup> that they get less than adults. Vigorous children can get along well without meat. Feeble children cannot do without ~~it~~.

GUILLOT'S CONCLUSIONS

Guillot, <sup>in France</sup> a Frenchman, weighed infants <sup>from time to time</sup> and came to the conclusion, that

under 1 year

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SICK DIET.

They often require very concentrated food. Sometimes infants who can eat nothing else, can be kept alive on beef tea. — The diet of the sick is classified into low and full diet.



\* Tissue waste is increased in acute diseases,  
 even if its products accumulate, un-excreted, in the  
 blood.



In private practice it generally has been so.

In army hospitals, it is classified into low, half and full diet. This practice is routine. It is time it were <sup>somewhat</sup> changed. ~~We do not mean that low diet should be abolished.~~ <sup>But</sup> the idea, on which it was <sup>formerly</sup> based, viz: that there is an excess of vitality that should be reduced, ought to be abandoned. It is not <sup>total</sup> sickness <sup>as to strength</sup> a minus quantity and not a plus one. <sup>Excitement is not measure of power.</sup> We should not weaken a person in order to make him well. What is the difference between a well and a sick person? <sup>Suppose</sup> a person to take ~~the malarial~~ <sup>small pox.</sup> He does not digest well; his appetite is impaired; and his excretions are diminished. In this febrile state a <sup>simple</sup> low diet is necessary. If the elimination by the excretory organs is little, we should not put much into the stomach. But the need of nourishment, is not diminished in sickness. We should not worry the digestive organs, but we should support nature. It has been proved that instead of not giving food to the sick, we should give liquid, concentrated food. The real times for low diets are in the beginnings of sicknesses. <sup>especially in</sup> <sup>refect. puple.</sup> It is surprising to find how

WRONG PRACTICE

PROPER TIME FOR LOW DIET.

SHOULD GIVE FOOD TO SICK.

Facts concerning the need of nourishment of a suitable kind ~~only~~ most cases of illness give the true solution of the problem which has been often missed by those who have advocated stimulism or the frequent and large, we may <sup>even</sup> say the general use of alcohol in acute diseases: Toddism.

End of 18<sup>th</sup> Lecture, 1872.

End of 1<sup>st</sup> Lecture on Stimulism 1875

End of 2<sup>nd</sup> Lecture, 1867, & 1870.

\* Perhaps I may, in some things I am about to say, repeat what you may have heard in the lectures upon Physiology & Institutes of Medicine; but, nevertheless, the statements seem to me necessary for completeness. Possibly I may some times vary a little, though I hope not much, from the accounts you have heard <sup>from others</sup> before of the same subjects.



in how considerable a number of patients & cases, early it is an advantage to give <sup>concentrated</sup> food in low fever, such as typhus. Beef tea and milk are <sup>much</sup> now given in ~~poor~~ <sup>prostrating</sup> maladies. We may often give beef tea instead of the slops (so called) of the sick-room, although some of these as oat-meal gruel, have much nitrogenous matter.

FOOD FOR SICK.

very well

EFFECT OF HARD FOOD.

Soft bread or bread, if given to the sick is not digested. The stomach is irritated and through sympathy, the semi-lunar ganglion is affected.

CONCENTRATED LIQUID FOOD.

In most instances of sickness, then, concentrated liquid food is necessary. In the height of a high fever <sup>in a period of slender constitution</sup> I have ~~found~~ <sup>found</sup> that in half an hour after taking beef tea, copious perspiration and other good effects have followed.

NUTRITIVE NITROGENOUS FOOD.

All nitrogenous principles <sup>are not</sup> ~~are not~~ equally nutritive. We will pass <sup>lightly</sup> over those which are not nutritive, and treat <sup>mainly</sup> of the nutritive.

ALBUMEN.

Albumen is found in the whites of eggs and in the liquor sanguinis. <sup>the rest (Dalton says) absolutely identical.</sup> It is coagulated by heat at about 145° to 170°. It is also coagulated by alcohol, strong acids, tannin, <sup>soluble</sup> corrosive salts, and creosote.

COAGULATION.

SIMILAR TISSUES IN THE BODY.

Albuminoid tissues is coagulated by the same substances. Some tissues are like albumen although it does not exactly the same; thus the connective

Synton forms  
from myosin (C)  
in first digestion  
or by HCl acid.

\* DIFFERENCE BETWEEN MUSCULIN AND BLOOD FIBRIN.

~~Musculin~~ differs chemically from blood fibrin, in being soluble in a solution of hydrochloric acid, as the latter is not.

Myosin chiefly (some osmazone perhaps) in brown part of heftan's <sup>from fibrin</sup> <sup>obtains Syntonin</sup>

\* Thurley's, of the existence of fibrinogen in the liquor sanguinis, which when mixed with <sup>(para)</sup> globulin of the corpuscles, makes solid fibrin, is at last improved. - white corpuscles (See L.S. Stelle's paper)

Paraglobulin

Möhler says no fibrin in live blood -

very generally thrown away!

COAGULATION OF CASEIN.

CURLING OF MILK.

Casein is ~~precipitated~~ <sup>coagulated</sup> by feeble acids, as acetic, lactic &c. which will not coagulate albumen. Thus in the curdling of milk, the casein <sup>change in the composition of</sup> <sup>or composition of the</sup> is insoligated, the organ of milk into by lactic acid, then curdles the casein not undigested.



When dissolved

Starch solution

2 more

TOOTH-ACHE

mucus and nervous is taken advantage of, by creosote. Sometimes

root cut, substance

balance h-ache

OPACITY OF THE AQUEOUS HUMOR.

comes of the eye, is coming in contact with it as an eye food is very great.

lower down in eye when vision is changed.

the aqueous of lead men as

MUSCULIN.

the blood and albumen is found in good. Myosin or

Australian are shaken it is of entry cysts.

it in gettable almost are equally

FIBRIN.

the time of Liebig it the fibrin of the blood than fibrin. Dogs fed on ~~protein~~ 55 days

Seen in ~~the~~ not well known. ~~of~~ S. American ~~stray~~

it. Before d from nutritious d 31 days brin is

SPONTANEOUS COAGULATION.

it is going to make tissue or ~~otherwise~~ it is ed-crementalious. <sup>Probably, it will make only fibrous, mechanical tissues.</sup>

We do know that it coagu-

lates spontaneously, but why it does so, we

THEORIES OF RICHARDSON AND LISTER.

cannot tell. Richardson's theory that it is ammonia that prevents this coagulation, is not accepted. <sup>Pricker's</sup> Lister's theory is better.

Next to fibrin

whether it

CASEIN.

Casein is found in milk and cheese and a little in blood. (and is certain tissues.)

is found in milk and cheese

and a little in blood. (and is certain tissues.)

Cheese is nearly pure casein. It would be very valuable as food but that it is so tough.





When dissolved they resemble, still more albuminoid.

mucous and nervous tissues. This resemblance is taken advantage of, in curing a tooth-ache by creosote. Sometimes an opacity of the <sup>cornea</sup> of the eye, is caused by sugar of lead coming in contact with it as an eye wash. The value of albumen as food is very great. In meat, we find it in the blood and albuminoid tissues. Vegetable albumen is found in cereal grains. They are almost equally good. Myosin (or syntonin) comes next. Before the time of Liebig it was not separated from the fibrin of the blood. \* It is more nutritious than fibrin. Dogs fed on fibrin lived 31 days on ~~myosin~~ <sup>albumen</sup>, 55 days. The use of fibrin is not well known. We do not know whether it is going to make tissue or whether it is excrementitious. <sup>Probably it will make only fibrous, mechanical tissues.</sup> We do know that it coagulates spontaneously, but why it does so, we cannot tell. Richardson's theory that it is ammonia that prevents this coagulation, is not accepted. <sup>\* Pricker's</sup> Lister's theory is better. Next to fibrin ~~comes~~ <sup>is</sup> Casein. It is found in milk and cheese and a little in blood. (and in certain tissues.)

TOOTH-ACHE

OPACITY OF THE AQUEOUS HUMOR.

MUSCULIN.

FIBRIN.

SPONTANEOUS COAGULATION.

THEORIES OF RICHARDSON AND LISTER.

CASEIN.

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Order of

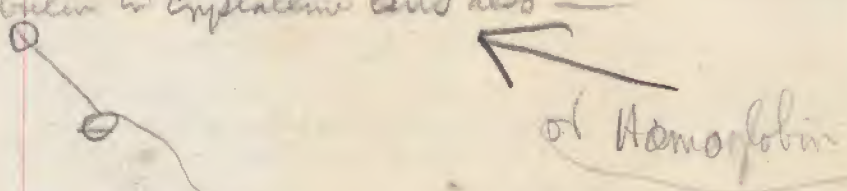
Nutritive Values;

Nitrogenous Principles;

Mysin	(Gluten, Ferum)
Albumen	(veg. album)
Casein	(Leyrum)
<del>Gluten</del>	<del>Ferum</del>
<u>Ferum</u>	Gluten

Neurin, (Protagon)
Haratin (Cruon)
Globulin
Chondrin (Relativ)

Cruon, & Hemoglobin, the color matter of unchanged blood corpuscles  
 Hematin & Hematoidin, the same somewhat changed —  
 Globulin in crystalline lens also —



\* Marshall doubts question the poverty of  
 Relativous food. Probably the best view is, — that  
 chondrin, of the tissues, is nutritious, but gelatin, got  
 by long boiling, is an educt, from the natural gelatinous material,  
 & differing somewhat in its properties, Relativ may be a force-food.  
 — Voit.





#

\* This is most of all important in connection with nitro-  
gen substance, — as most complex and decomposable  
of all organic materials.

Paraffin <sup>over</sup> — melts at 300°

ANTI-SEPTICS.

VINEGAR.  
AND  
OIL.

SYRUP.

Other Food-preserving Substances  
are vinegar (as in pickling) and oil. The latter  
is used for small fish as sardines & anchovies,  
and in Italy, to keep wine by floating on its sur-  
face and excluding the air. In this its action  
resembles that of syrup in preserving fruits.



due, so far as could be ascertained, in both cases, to some degeneration or alteration of the mucous membrane of the uterus; 3, the same results followed the use of the galvanic pessary: the hemorrhage was supplanted by a profuse leucorrhœa, with some pelvic or uterine pains; 4, the recovery seemed to be complete in both cases, one menorrhagic period happening to both several months later, but not followed in either case by a second.

**POPLITEAL ANEURISM CURED BY CONSTRICTION OF THE FEMORAL ARTERY** (*New York Medical Journal*, May, 1874).—Dr. N. A. Robbins reports a case of popliteal aneurism of about three months' standing, occurring in a negro, aged 30. His leg was drawn up, swollen, and œdematous, and he was delirious from the excessive pain. The femoral artery was cut down upon in Scarpa's space, exposed, and Dr. Speir's artery-constrictor was applied. The instrument was kept on about three minutes, and then removed; pressure was kept on the femoral for ten minutes, in order to favor the formation of a clot at the constricted part. The wound was closed by wire sutures. The pain seemed to cease immediately after the operation, and for the first time for weeks the patient slept soundly. In ten days the wound healed, and in three weeks he was walking about almost entirely cured.

**TREATMENT OF CHOLERA BY THE HYPODERMIC INJECTION OF CHLORAL HYDRATE** (*London Lancet*, May 2, 1874).—Dr. Hall, in a paper published in the *Indian Annals of Medical Science*, states that in the cold stage of cholera, instead of exhaustion of the nervous system, as is generally supposed, there is intense irritation of certain sets of nerves. He suggests that the principle which should guide us in the treatment of this condition is the endeavor to quiet the nervous system by the action of pure sedatives, and recommends the practice of hypodermic injection of sedatives in the stage of collapse. Subsequent experiments as to the physiological effects of chloral hydrate have induced Dr. Hall to make a trial of this agent in cholera, and his practice has been followed by others with satisfactory results, so far as the reports at present extend.

**ACUPUNCTURE IN DROPSY** (*The British Med. Jour.*, May 23, 1874).—Dr. W. Munro reports two cases of general œdema, one dependent on organic disease of the heart, the other on anæmia. In both cases all kinds of diuretics were tried without success, but finally the former case was relieved and the latter cured by the frequent puncturing of the distended skin with small sewing-needles, making twenty or thirty punctures two or three times daily. This procedure always gave immediate relief to the dyspnœa and other distressing symptoms.

**APPLICATION FOR BURNS**.—M. Lebigot recommends the following mixture as having been very successful:

R Cape aloes, 4 ounces;  
Water, 10 ounces;

emarked here that no  
iple will support life; nei-  
at ~~principles~~.  
less. We must have all.

crement of the dogs so  
that nearly all the gela-  
the bowels, unchanged.  
this, because <sup>Chondrin</sup> gelatin is the  
of the body. It is supposed  
issue could be removed and  
skeleton of the form  
atin must have some use  
ason therefore that jelly  
aps that it is changed  
iling. We will next take  
; but before this we will  
of preserving food\*  
ptics for Food.

Nitre

Glycerin

Sulphites

Charcoal

~~Explosion~~

Exclusion of Air  
Progress

All nitrogenous substances decay soon. To prevent



#

THE DIETETIC TREATMENT OF DISEASE (*The Lancet*, May 23 and 30, 1874).—Dr. E. A. Parkes found, in the course of some experiments on healthy men with different kinds of food, that a diet of dried meat and bread, without fats or vegetables, produced in two or three days very great indigestion and depression of spirits, with an acneform eruption on the face and shoulders. These symptoms were at once removed by adding starches and butter to the same diet. This observation seems important in connection with dieting in fevers, where often such quantities of animal broths are given, and, with the exception perhaps of a little arrowroot, no starches and no fats are ordered. It might be that the best treatment for "irritable gastric dyspepsia" would be not to give vegetables at all or any nitrogenous food, but for two or three days to let only starches and fats, in some digestible form and without salt, enter the stomach. A meat diet has in some cases seemed to have a special influence on the skin,—psoriasis inveterata and eczema squamosum having been cured by Bantingism, omitting the alcohol used in that system. A purely non-nitrogenous diet lessens in a very great degree the acidity of the urine, and does so by preventing the formation of the acid. It also markedly reduces the power of the heart within twenty-four hours after the commencement of the diet. The beat is more feeble, the pulse is smaller and softer, and, if the sphygmograph is used, the height of the up-stroke is only half of what it is in the normal state of the man. This action may be useful when we wish to subdue a powerfully-acting and excited heart, or in the treatment of aneurisms. The men experimented upon took, on an average, ten ounces of arrowroot, six ounces of sugar, and two and one-third ounces of butter in each twenty-four hours. This quite satisfied hunger, and maintained weight and health. If it be deemed necessary to add nitrogen without giving meat or bread, a little ground rice may be added, one ounce of which contains three and a half grains of nitrogen; or an egg may be given, one two ounces in weight yielding about nine and a third grains of nitrogen. In regard to the influence of alcohol on appetite and digestion, the evidence obtained from three healthy men as to any increase of appetite or more vigorous digestion from small doses of alcohol was found to be rather more negative than positive, anything over two fluid-ounces of alcohol being found to lessen appetite if the stomach was empty, and to injure digestion. The quantity of alcohol given for the particular purpose of increasing appetite should not exceed one fluidounce of absolute alcohol in a day, and half an ounce is often enough. It should be given with food, and for many patients the best plan is to give rectified spirit, properly disguised, as a medicine. If a fattening effect is desired, and no gouty tendencies exist, beer containing a good deal of malt extract is suitable; if salines and acids seem desirable for the kidneys, the light French wines are appropriate; but in any case a natural wine as little doctored as possible should be insured.

combination with nitro-  
gen and decomposable

lbs at 3000

substances  
and oil. The latter  
lines & are mixed,  
floating on its sur-  
face this its action

remove most of syrup in preserving fruits.

ANTI-SEPTICS.

VINEGAR.  
AND  
OIL.

SYRUP.

\* 2  
mean  
fall



icle. It may be remarked here that no one proximate principle will support life; neither will any one class <sup>of proximate principles</sup>. We must have all.

EXAMINATION OF EXCREMENT.

By examining the excrement of the dogs so fed, it was found that nearly all the gelatin passed through the bowels, unchanged.

GELATINOUS SKELETON.

We are surprised at this, because <sup>Chondrin & gelatin</sup> gelatin is the most abundant tissue, <sup>including the connective tissue, the</sup> of the body. It is supposed that if every other tissue could be removed and this one left, a perfect skeleton of the form would remain. \* Gelatin <sup>is of</sup> must have some use in the body.

CHANGE IN BOILING.

The reason therefore that jelly is <sup>poor</sup> bad food, is perhaps that it is changed by the process of boiling. We will next take up ~~the~~ <sup>the</sup> ~~liquid~~ <sup>solid</sup> food; but before this we will speak of the modes of preserving food.\*

ANTISEPTICS OF FOOD.

The Antiseptics for Food.

- |         |          |                  |
|---------|----------|------------------|
| Salt.   | Vinegar  | Nitre            |
| Sugar.  | Oil      | Glycerin         |
| Spices. | Charcoal | Sulphites        |
|         | Heat     | Charcoal         |
|         | Cold     | Exclusion of air |
|         | Dryness, | Exclusion of air |

All nitrogenous substances decay soon. To prevent

*Putrefaction and*  
*or*

$\begin{matrix} + \\ \wedge \end{matrix} \textcircled{1}$



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$\textcircled{3}$   
 A new mode (1870-1) used in Texas, with admitted  
 success — said to be by injecting air at a low temperature, &  
 then sealing up.



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SALT.

SUGAR.

SPICES

NITRE

SULPHITES.

CHARCOAL

HEAT

COLD

DRYNESS.

(This  
CANNING.

Formerly saltpet  
good, but it gives  
the meat. Sulphite of  
ion of oxygen. Hence  
in their Cider, Charcoal  
conditions favorable to preservation are, a  
very high temperature, a very low one, and  
dryness. The latter is as effective as the  
former. In South America dried meat  
is ~~used~~. In the West, pemmican, made  
of buffalo's meat dried, is much used.  
Game meats and fruits have been preserved  
by means of air-tight vessels. We thus not  
only preserve the article, but also preserve  
its original taste.

ORTIETH CONGRESS... First Session.  
Washington, March 16.  
Senator of Michigan, reported from  
Commerce a bill to amend  
of an act further to protect  
steamboats, so as to  
being com...

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put it  
gases. The  
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are, a

↑ Heating & sealing.

+ (1)

(4)  
 Dr. H. Eubemann of Boston proposes  
 to keep meat by cutting it in  
 slices, drying below 140° (so as  
 not to coagulate alb. & fibr.) and  
 then grinding to powder in a mill,  
 It can then be prepared for use at any  
 time with water. In a hot air chamber  
 it can be dried in two hours under 140°.

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(3)  
 A new mode (1870-1) used in Texas, with admitted  
 success — said to be by injecting air at a low temperature, &  
 then sealing up.



Their decomposition various substances are used. When the article is used for food,

many things are used which anatomical subjects would be deleted.

WASHINGTON, March 16. THE VIRGINIA DELEGATION. The delegation appointed by the Legislature of Virginia called yesterday upon the Senate Committee on the Judiciary. The interview was of a highly satisfactory character, and the latter was assured of the earnest intention of the State to return to her place in the Union under the terms proposed by Congress. The delegation, just previous to their returning to Richmond, visited the President of the United States, who, according to the statement of one of the members of the delegation, said he was apprised of the object of their mission; that notwithstanding his opposition to the Reconstruction bill it was now a law of the land, and he should faithfully execute it; that he thought the Legislature had done right by promptly accepting its terms, which he hoped would lead to alleviate the bitterness produced by the late war, and at an early day restore the Southern States in all their relations to the Federal Government.

preserving it as used which is not as

SALT.

combines with a nourishment as fresh.

it is not as

SUGAR.

well. Sugar is

fruits, is

SPICES

pecially. Spices are

also used.

NITRE

Formerly saltpetre was efficient

is

SULPHITES.

good, but it gives a cloying sweetness to the meat. Sulphite of soda prevents the action of oxygen. Hence farmers sometimes put it in their cider, Charcoal absorbs gases. The conditions favorable to preservation are, a

CHARCOAL

HEAT

very high temperature, or a very low one, and

COLD

dryness. The latter is as effective as the

DRYNESS.

former. In South America dried meat is common. In the West pemmican made of buffalo's meat dried, is much used.

CANNING.

Lately meats and fruits have been preserved by means of air-tight vessels. We thus not only preserve the article, but also preserve its original taste. \* Heating & sealing.

A (1)

(4)

Dr H. E. ...  
 keep  
 slices,  
 not to con  
 than grow  
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 time in  
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...d dollars, shall be imp  
 demands legislation more urgent.  
 the crowding of people in halls from  
 which the modes of egress are narrow and  
 cramped.

AGED MEAT.—A letter from Stockholm reports that at a meeting of what is known as the Idun Society, recently held there, the members eat for supper beef that was forty years old. In 1827 Captain Parry placed at School Point, Spitzbergen, a depot of meat. The flesh was in tin boxes, buried beneath a quantity of stones. The white bears had displaced some of the stones and destroyed several of the boxes, but a few still remained intact, and were brought to Sweden by a Swedish scientific expedition. One of these boxes had been given to the Idun Society, who found the meat perfectly eatable and of good flavor.

BRITISH COLUMBIA.—In the Canadian federation bill now before the English Parliament, it is provided that British Columbia may ultimately be admitted to the Dominion. The people of the province propose to hold a public meeting for

W. H. Weston propon  
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 mill,  
 at any  
 hot air chamber  
 hours under 140°.

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(3)

A new mode (1870-1) used in Texas, with admitted success — said to be by injecting air at a low temperature, & then sealing up.



their decomposition various substances are used. When the article is not intended for food, many things are used. Thus in preserving anatomical subjects, substances <sup>as chloroform, chloric acid, &c.</sup> are used which would be deleterious if put on food. Salt

SALT.

combines with albumen. Salt meat is not as ~~now~~ <sup>now</sup> good as fresh. We cannot live on it as

SUGAR.

well. Sugar is used for preserving fruits, especially <sup>fruits & vegetables</sup>.

SPICES

and sulphites are also used.

NITRE

Formerly saltpetre was <sup>much</sup> used. Glycerine is

SULPHITES.

<sup>efficient</sup> good, but it gives a cloying sweetness to the meat. Sulphite of soda prevents the action of oxygen. Hence farmers <sup>sometimes</sup> put it

CHARCOAL

<sup>in their cider,</sup> in their cider, Charcoal absorbs gases. The <sup>exclusion of the air,</sup> conditions favorable to preservation are, a

HEAT

very high temperature, a very low one, and

COLD

dryness. The latter is as effective as the

DRYNESS.

~~former.~~ In South America dried meat is <sup>usually</sup> ~~rather~~ <sup>rather</sup> used. In the West, pemmican, made of buffalo's meat dried, is much used.

CANNING.

<sup>of the</sup> lately meats and fruits have been preserved by means of air-tight vessels. We thus not only preserve the article, but also preserve its original taste. <sup>Heating & sealing.</sup>





OLEAGINOUS FOOD.

It is both veg. & animal in origin.

We will next treat of oleaginous food. Fats and oils are contained in the proximate principles, as olein, <sup>palmitin</sup> margarin, and stearin. Each of these is composed of an acid and a base. This base can be separated by an alkali, by the process of saponification. This process takes place in digestion.

SAPONIFICATION

Olein, in olive oil, is the most liquid of these, <sup>palmitin</sup> margarin, is next, and stearin next.

USES OF FAT.

Fat is needed in the body. From pole to pole, wherever man is, he consumes fat.

TO MAKE TISSUE, TO BURN,

Fat has several uses. 1st. It makes fatty tissue. 2nd. It acts as fuel. As oil burns well in the open <sup>or many lamps</sup> air, so in the blood it does <sup>also</sup>. 3rd. It aids the <sup>assimilation</sup> digestion of other food.

ROAD OF DIGESTION

In very small quantities it is good, but in large quantities it is not, as any one may test by eating a pound of butter. 4th. It aids assimilation. It is supposed that it may have something to do with the formation of cells. If we let a drop of oil fall into albumen, it will collect a thin membrane around it. A certain proportion of fat is necessary. In tuberculosis a result of its deficiency

TO INFLUENCE ASS.

Albumen

CELLULOSE  
AND  
LIGNIN.

Of the amylaceous group, besides starch, dextrin,  
and gum, ~~cellulose~~ and lignin should be named.

As already said, our force food  
bears a large proportion to our tissue food.

⑧ Laborious - through laborious and  
as a stage

For Blackboard

<u>Grain</u>	<u>C.</u>	<u>N.</u>	<u>nutritive values</u>	<u>Gr. per lb.</u>	<u>C.</u>	<u>N.</u>
Indian meal	3015	120	1	Baker's bread	1975	88
Rye meal	2693	86	2	New mill	599	88
Seco's Flour	2700	116	3	Cheddar cheese	3344	306
Oatmeal	2831	136	4	Beef	1854	184
Barley	2732	68	5	Mutton	1900	157
Potatoes	759	22	6	Red herrings	1435	217
9 Cocoa						
10 Beer						



AMYLACEOUS  
FOOD.

PROPORTION  
OF OXYGEN.

DR. LEIDY'S  
EXPERIMENT  
OF BEES.

NEGROES.

We will next consider amylaceous food, as starch and sugar, with dextrin intermediate; also gum. Amylaceous food differs from oleaginous in the proportion of oxygen being the same as in water. Carbo-hydrates, or amylaceous foods, are very important. They constitute the bulk of vegetable food. They help to make <sup>it least fatty</sup> tissue. Dr. Leidy fed bees on sugar and they continued to make wax. It was objected to this experiment that the sugar was impure. That sugar may be transformed into tissue is proved by the fact that during the harvest season in the <sup>W. Indies</sup> south the negroes grow very fat from eating sugar cane. Chamois Hunters - Lacoper Boyer,

Bantingism! ← Lecture IV. → for force.

AMYLACEOUS  
GROUP

STARCH  
FOOD

Space of  
a page

Amylaceous Group. (2)

Starch	C <sub>24</sub>	H <sub>40</sub>	O <sub>20</sub>
Gum	C <sub>24</sub>	H <sub>40</sub>	O <sub>24</sub>
Dextrin	C <sub>24</sub>	H <sub>40</sub>	O <sub>24</sub>
Sugar	C <sub>12</sub>	H <sub>22</sub>	O <sub>11</sub>
Cellulose	C <sub>24</sub>	H <sub>40</sub>	O <sub>20</sub>
Lignin	C <sub>24</sub>	H <sub>36</sub>	O <sub>4</sub>
Schlerogen.	C <sub>35</sub>	H <sub>54</sub>	O <sub>20</sub>

Starch Foods.

Wheat	Starch
Potato	"
Corn	"
Arrowroot	"
Sago	"
Japioca	"
Canna.	se.

Over

[omit in copying]

Wöhler (1871) thus:  
Carbohydrates.

or double?

W. 12  
W. 12  
W. 12  
W. 12

Glucose, Dist. sugar -  
Grape sugar -  $C_6 H_{12} O_6 = \text{Carbon 6, Water 6 } (C_{12} H_{24} O_{12})$   
Crystallizable, fermentable, solution rotates plane of light to right.

Milk sugar -  $C_6 H_{12} O_6$ , with glucose in fruits & is  
not crystallizable - fermentable - sol. rot. pl. pol. to left.

Lactose  $C_6 H_{12} O_6$  - made from lactin by heating with dilute acids.

Cane sugar  $C_{12} H_{22} O_{11}$  - crystall. - not fermentable  
a little in new fall (especially unripe) fruits & is - sol. rot. pl. pol. right

Sugar of milk  $C_{12} H_{22} O_{11}$  - changed by yeast into lactose & glucose  
crystall. is. ferment. & H<sub>2</sub>O ind. rot. right

End of 3<sup>d</sup> Lecture,  
1867 & also 1868, & 1869.

Cellulose	$C_6 H_{10} O_5$	$(= C_{12} H_{20} O_{10})$	Starch, 12 Carbon, 10 water Cane Sugar Sugar of milk } 12 C 11 water Grape Sugar 12 C 12 water
Starch	$(C_6 H_{10} O_5)^x$	$C_{12}, \text{water } 10$	
Glycerin	$C_6 H_{10} O_5$		
Gum	$C_6 H_{10} O_5$		
Dextrin	$C_6 H_{10} O_5$		



dry or humid wall, without diffusion; next, variation of temperature where there is no change of pressure; and third, variation where there is such change. With constant pressure, there is fall of temperature on the side where the denser gas is; and rise on the other side. Each current seems to have a heating effect where it enters the porous wall and a cooling one where it issues. With change of pressure, where this rises within the vessel, through lighter gas, the temperature slightly increases, pressure tends to equilibrium. Where

h are  
le so,  
starch

NON-NUTRITIVE  
AMYLACEDOUS  
FOOD.

There are not nutritive

are in the foregoing list. ~~(The following are)~~  
is ~~C<sub>12</sub>H<sub>10</sub>O<sub>10</sub>~~; gum C<sub>12</sub>H<sub>11</sub>O<sub>11</sub>; dextrin C<sub>12</sub>H<sub>12</sub>O<sub>12</sub>; sugar, C<sub>12</sub>H<sub>14</sub>O<sub>14</sub>; cellulose C<sub>12</sub>H<sub>10</sub>O<sub>10</sub>; lignin, C<sub>12</sub>H<sub>8</sub>O<sub>8</sub>

CELLULOSE AND LIGNIN. SCHLEROGEN.

Cellulose and lignin are found in the solid or woody parts of plants. ~~Woody~~ <sup>hard</sup> ~~is~~ <sup>chemically</sup> ~~divided~~

<sup>separable</sup> into two substances, one of which is schlerogen (C<sub>35</sub>H<sub>24</sub>O<sub>20</sub>) This is found in <sup>nut shells,</sup> rinds and cores of <sup>hard wood bark.</sup> fruit and in bran. ~~It cannot support life~~

SUGAR.

itself, but, <sup>more assimilable</sup> with it, is a nourishing material; hence by throwing the rind of a fruit away something is lost. <sup>Bread of wheat, cereals of barley &c. Bran</sup> We will first treat of sugar. We use

it almost as a <sup>condiment or</sup> luxury alone. It is eaten <sup>or condiment</sup> more than any other luxury. So much is consumed that it is a source of considerable revenue to <sup>some</sup> governments. We <sup>perhaps</sup> undervalue its value. There

TWO KINDS.

are <sup>principal</sup> two kinds of sugar, cane, and grape sugar, or glucose. <sup>Both as used for food, are originally of vegetable origin.</sup> There is much interest at-

CHANGES IN THE PROCESS OF GERMINATION.

tached to the changes which take place in <sup>as in other juices,</sup> seeds, during the process of germination. <sup>growth of plants & ripening of fruits.</sup> The starch, stored up in the <sup>for instance,</sup> seed, is changed into sugar and afterwards to an acid. If this process, which requires diastase, continues,







NON-NUTRITIOUS  
AMYLACEOUS FOOD.

There are some amylaceous substances which are not nutritious. All that have any claim to be so, are in the foregoing list. (The composition of starch is  ~~$C_{12}H_{20}O_{10}$~~  <sup>or  $C_{12}H_{20}O_{10}$</sup> ; gum  $C_{12}H_{11}O_{11}$ ; dextrin  $C_{12}H_{12}O_{12}$ ; sugar,  $C_{12}H_{22}O_{11}$ ; cellulose  $C_{12}H_{10}O_{10}$ ; lignin,  $C_{12}H_8O_8$ )

CELLULOSE AND LIGNIN.  
SCHLEROGEN.

Cellulose and lignin are found in the solid or woody parts of plants. ~~Woody~~ <sup>these</sup> ~~is~~ <sup>chemically</sup> ~~divided~~ <sup>separable</sup> into two substances, one of which is schlerogen ( $C_{35}H_{24}O_{20}$ ) This is found <sup>in</sup> ~~in~~ <sup>with shells,</sup> rinds and cores of fruit and in ~~bran~~ <sup>hard wood</sup>. It ~~cannot~~ <sup>act as food</sup> support life itself, but, ~~with it,~~ <sup>& more assimilable</sup> is a nourishing material; hence by throwing the rind of a fruit away something is lost.

SUGAR.

We will first treat of sugar. We use it almost as a <sup>condiment or</sup> luxury alone. It is eaten <sup>or condiment</sup> more than any other luxury. So much is consumed that it is a source of considerable revenue to <sup>some</sup> governments. We <sup>perhaps</sup> underrate its value. There

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are <sup>two</sup> kinds of sugar, cane, and grape sugar, or glucose. <sup>Both as used for food, or especially in vegetable origin.</sup> There is much interest at-

CHANGES IN THE PROCESS OF GERMINATION.

tached to the changes which take place in <sup>sap or other juices,</sup> seeds, <sup>growth of plants & ripening of fruits.</sup> during the process of germination. The starch, stored up in the <sup>seed,</sup> <sup>for instance,</sup> is changed into sugar and afterwards to an acid. If this process, which requires diastase, continues,

\* Cane sugar is <sup>CANE</sup> ~~beet~~, sorghum, <sup>beet-root,</sup> maple, date, manna;  
 Gripe is in Honey, many fruits;  $PO_3$  or starch.

Total yield of sugar cane about 2000,000 tons yearly -  
 U.S. consume 500,000 tons sugar & 16000,000 <sup>in</sup> molasses annually.

→ End of 3d lecture, 1870 ←

MOLASSES.

Contains <sup>Some</sup> free acetic acid, and <sup>the</sup> ~~unrefined~~ <sup>refined</sup> sugar-house or plantation ~~other~~ <sup>other</sup> impurities. At the present, it should be but moderately used - as it may clog and cause indigestion. In children, it often over-encourages the desire for food, so as to cause them to eat to excess. This interferes with the benefit otherwise derivable from its laxative property.

Worms

[Space of 1/4 page]

⊛ (See Robinson's on Brown Sugar)  
 acari 1,000,000 (in a pound)  
 250,000





<sup>or sorgho</sup>  
 Sorghum is now largely grown in  
 several parts of this country; "Sorghum Nigrum" -  
 introduced into this country in 1854. - In 1857, Imphee, from  
 South Africa; several varieties. Kater, <sup>1859</sup>, Otakeeta cane,  
 & Liberian cane.

Liquid glucose is made cheaply in Germany,  
 & imported here as a substitute for or adulteration of  
 Sugar Cane molasses.

Fruit-sugar, Möhler says, is to be dis-  
 tinguished from grape sugar: the latter crystallizes,  
 fruit sugar not; both fermentable; gr. sug. polarizes  
 ray of light to right, fr. sugar to left.



The Sugar Maple is a beautiful tree. On an average, each bush yields a large quantity of maple sugar, which has a sweet taste but clays so.

and the great excess of carbonic acid which the water contains particularly enables it to act strongly on the metallic substances of the apparatus; a truth of which the reader will find no difficulty in convincing himself, by suffering a stream of sulphuretted hydrogen gas to pass through the water." And in a note to this, "Some manufacturers have been hence induced to construct the apparatus for manufacturing soda water wholly either of earthenware or of glass."

The following reminds us of a recent report of the Massachusetts State Board of Health:—

"The leaves of the cherry laurel, *Prunus lauro-cerasus*, a poisonous plant, have a nutty flavor resembling that of the kernels of peach stone or of bitter almonds. It has been asserted, that the laurel poison is contained in enstards and other articles of cookery is,

SORGHUM.

Sorghum or as good as cane; it may yet be made

INDIAN CORN.

There is a sugar which is found in Indian corn, but not profitable in amount.

DATE PALM.

The date-palm of the East, yields sugar, like that of the cane.

GRAPE SUGAR.

Grape sugar may be seen in raisins. It is not as good as cane sugar, and is

Sometimes

used to adulterate it. It is less soluble & less crystallizable than cane sugar, but will ferment. It is made cheaply by the action of sulphuric acid. It is found also in berries, but is not manufactured from them.

HONEY.

Honey contains it, flavored by certain aromatic substances, according to the flowers from which the honey is gathered. Certain honey, as Trebizonde honey is poisonous. Xenophon mentions the poisoning of an army by such honey.

POISONOUS, AS TREBIZONDE HONEY.

A few words only may be said concerning here

MAPLE-SUGAR. — According to the last census returns, Vermont is the banner State for maple-sugar, reporting a yield of almost ten million pounds. The production of New York is somewhat larger, but nothing compared with the difference in area. The only other States which return more than one million pounds are Michigan four million, Ohio three and one quarter million, Pennsylvania nearly three million, New Hampshire two and one quarter million, Indiana one and one half million, Massachusetts a few pounds more than a million. The total production is forty million pounds. The total production of maple molasses is one and a half million gallons, of which Ohio returns nearly four hundred thousand gallons, Indiana nearly three hundred thousand, Kentucky one hundred and forty thousand, and Vermont only sixteen thousand gallons.

Introduced into this country in 1857. — In 1857, Dupree, from South Africa; several varieties. Later, <sup>1859</sup> "Otakeeta cane" & Liberian cane.

Liquid glucose is made cheaply in Germany, & imported here as a substitute for or adulteration of sugar cane molasses.

Fruit-sugar, Möhler says, is to be distinguished from grape sugar: the latter crystallizes, fruit sugar not; both fermentable; gr. sug. polarizes ray of light to right, fr. sugar to left.



The Sugar Maple is a beautiful tree, and a ready grower. - 5  
On an average, each tree yields <sup>one or two</sup> a pound of sugar <sup>each season</sup>. Maple sugar is very pleasant to the taste but cloys sooner than any other.

SORGHUM.

Sorghum or Chinese sugar is not as good as cane; It cloys soon. Perhaps it may yet be made equal to <sup>Cane-Sugar</sup> any other.

INDIAN CORN.

There is a sugar which is found in Indian corn; but not profitable in amount.

DATE PALM.

The date-palm of the East, yields sugar, like that of the cane.

GRAPE SUGAR.

Grape sugar may be seen <sup>readily</sup> in raisins. It is not as good as cane sugar, and is <sup>Sometimes</sup> used to adulterate it. <sup>It</sup> is less soluble & less crystallizable than <sup>but will ferment</sup> cane sugar. It is made cheaply by the action of sulphuric acid. <sup>or diluted</sup> It is found also in berries, <sup>with the fruits</sup> but it is not manufactured from them.

HONEY.

Honey contains it, flavored by certain aromatic substances, according to the flowers from which the honey is gathered. Certain honey, as Trebizonde honey is poisonous. Xenophon mentions the poisoning of an army by <sup>such</sup> honey.

POISONOUS; AS TREBIZONDE HONEY.

A few words <sup>only</sup> may be said concerning <sup>here</sup>

of karpidom

\* & more recently by Dr. Mc Donnell of Dublin.

Its origin is yet unsettled - tho' many hold the view that it comes from the non-conversion of sugar into lactic acid by healthy respiratory combustion <sup>under</sup> ~~the~~ aeration of blood in the lungs.

meat & bran crackers ( & cabbage )  
+ Carophin  
also -  
Mucous, spermatic  
ciliary & ciliated



DIABETIC SUGAR

diabetic sugar. The passage of this sugar in the urine, accompanied by waste of the system, is a subject of interesting discussion. <sup>It has already alluded to the fact that</sup> The liver as a sugar-producing organ <sup>has been especially</sup> examined by ~~Bernard~~ <sup>of Paris</sup> ~~and Lehmann~~ and by Dr. Parry\*. This sugar may be tested like other sugars.

LIVER

TESTS FOR GRAPE SUGAR

The <sup>principal</sup> tests for grape sugar are ~~three~~ <sup>three</sup> in number. 1st. the action of sulphate of copper, and <sup>sulphate of</sup> potassa, by which a yellowish red precipitate is obtained. This test is called Trommer's. 2nd. the action of potassa and heat, called Moor's. 3rd. The fermentation test. Glucose, or grape sugar is the only kind that will ferment. These tests are of course available to detect <sup>the admixture of cane sugar.</sup>

SHOULD SUGAR BE GIVEN TO DIABETIC PATIENTS?

In regard to diabetic patients, there has been much argument among doctors as to whether or not sugar should be given. Some suggest sugar as a cure for the disease. Others recommend yeast. The majority, Canfield among others, say that sugar should be avoided; that instead of it meat or food of that kind should be used. †



*P. M. Manna*

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MANNITE,  
LICORICE  
AND  
LICHENIN.

There are other forms of sugar, as manna, a product of the ash, licorice, and lichenin; besides muscle-sugar, of animal origin.

GLYCERIN.

Glycerin is not a sugar; its chemical relations are more like those of alcohol. It is very sweet, but it cannot be substituted for sugar, unless in the case of diabetics who have an appetite for sweets.

WHOLE-SOME-  
NESS  
OF  
SUGAR.

In regard to the unwholesomeness of sugar, there is much prejudice. Children are forbidden to eat it, although they have a craving for it, which seems to be something more than <sup>the</sup> mere taste. Sugar is easily dissolved and absorbed rapidly.

CRAVING  
OF  
CHILDREN.

EFFECT OF  
EXCESS.

When taken excessively it causes leucorrhoea <sup>or</sup> richness; it makes acetic instead of lactic acid. Lehman says that the making of lactic acid, is the first step in the process of making fat; <sup>perhaps</sup> but not the next.

LEHMAN'S  
STATEMENT.

SUGAR HAS  
NO  
EFFECT ON  
THE TEETH.

It is very common to say that sugar decays the teeth. This is a mistake. There is no effect unless the stomach is out of order and acetic acid is thrown into the mouth. Then perhaps the enamel

as it does also cause pain when there is  
an ulcer of the stomach.

End of 19<sup>th</sup> Lecture, 1872

End of 13<sup>th</sup> Lecture, 1871; - 3<sup>d</sup> on Alimentation.

Recapit. list of Amylaceous principles -  
 & sources of Cane & Grape Sugars -

Show specimens of different starches;  
on board, magnif. views of st. corpuscles,  
 from Parkes? (Hassall).



have chosen assignees. The liabilities of the firm amount to \$2,300,000.

Frederick Myers, the accomplice of William Murray, who was convicted on Thursday last of the murder of Gothard Wahl in November, was also convicted on Saturday of murder in the first degree.

In South Australia the results of the wheat harvest have been more satisfactory than was anticipated when the reaping commenced. It was estimated that the surplus for exportation will exceed 250,000 tons.

A violent storm of hail and snow prevailed at all points on the Hudson on Saturday night. The wind was from the northeast and blown very hard. It adds much to the already large quantity of snow and ice on the ground, and increases the fears of damaging freshets.

During the past few days a rumor has been in circulation throughout the Lehigh Valley that the miners in that region would resume work to-day. It is impossible to trace it to any reliable source, although some of the collieries will probably start, thereby giving some hope for a general resumption.

Latest California mining stock quotations: Ophir, 96; Mexican, 26 1/2; Gould & Curry, 18 1/2; Best & Belcher, 50; Savage, 127 1/2; Chollar, 59 1/2; Hale & Norcross, 46; Crown Point, 29; Yellow Jacket, 76; Imperial, 7 1/2; Empire, 5 1/2; Kentucky, 14 1/2; Alpha, 18 1/2; Belcher, 33; Confidence, 17 1/2; Consolidated Virginia, 42 1/2; Sierra Nevada, 12 1/2; California, 53 1/2; Exchequer, 215; Overman, 51; Bullion, 47; Justice, 68; Union, 8 1/2.

The Courier-Journal reporter, who was sent to the locality of the troubles in Todd county, Ky., reports that four of the accused Kuklux are in jail, and will be brought up for trial to-day. The company of State militia has arrived and all is quiet. There is no apprehension of any attack upon the jail or an attempt at the rescue of the prisoners by their friends.

A telegram has been received at Lieutenant General Sheridan's headquarters, Chicago, reporting the surrender at Fort Sill of a portion of the Quohada band of Indians. This tribe is perfectly wild, and one of the most troublesome in the Southwest. The indications are that the whole tribe will come in.

Two freight trains on the Canadian Grand Trunk Railway collided on the Lachine Canal bank, Point St. Charles, Friday night, smashing both locomotives and some cattle cars, killing a number of cattle and seriously injuring one of the engineers. The accident was caused by the error of the telegraph operator, who has run away.

The Legislature of Delaware will adjourn in a few days. The measure attracting most interest is a bill to loan the credit of the State to the amount of \$300,000 to several proposed railroads in the central and lower sections of the State. They are designed to form part of a system centering at Lewes, there to connect with the Old Dominion line of steamers to New York. The bill passed the House of Representatives on Wednesday by a vote of 11 to 10, and has been read twice in the Senate. Its passage in that body is considered impossible.

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may be acted on. The  
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cater, and in spu  
the West Indian  
have better teeth  
the people of the  
Caw sweet,  
French article.

EATING OF  
SUGAR CANE.

SUGAR-  
WATER  
OF THE  
FRENCH.

ADULTERATION  
OF  
SUGAR.

BROWN.

WHITE.

A certain lecturer  
sugar water which  
formerly of the U  
Adulteration  
ous. Brown sugar  
water; a  
ces of cane, &c.  
monly adulterated

pecially when pulverized. Chalk, gypsum  
and marble are used. Marble has the  
same crystalline structure as sugar.  
Sifted sugar is less liable to be adulterated  
than pulverized. We can detect, by placing the  
sugar in water, when the marble &c will not dissolve.

TEST.

How



we enumerate the different form of adulteration, taking the word in its widest sense.

*First.* The foreign matter may be added simply to increase the weight or bulk of the article, and may be in itself wholly inert, as when sugar is wetted or mixed with sand. Here the buyer is simply cheated in practically the same way as when false weights are used.

*Second.* The substances may be added to improve the appearance, as when alum is added to bread to increase its whiteness, or when pickles are treated with a solution of copper to develop a green color.

*Third.* The adulteration may consist in the addition of some substance to increase, absolutely or apparently, the strength of the article, so that a weaker grade may pass for a stronger. This is a common form of adulteration in liquids, which are first diluted with water to increase their volume, and then the effect of this dilution counteracted by the addition of some substance which either increases the density or restores the taste.

*Fourth.* Sometimes there is a complete substitution of one article for another, as when diluted sulphuric acid is sold as vinegar.

*Fifth.* Occasionally the foreign matters are added without intention to deceive the buyer, but merely in deference to a prevailing custom or fashion. These cases are therefore not strictly adulteration, but since the substances added may be poisonous, the examination for them is too important to allow a mere technical distinction to interfere. *E.g. green teas.*

*Sixth.* It will appear, however, that the form of adulteration which is at once most extensively practiced and most difficult of detection is that which consists in adding to an article of high grade and price substances of the same nature, but of inferior quality. Here the chemist is almost completely at loss, since the question of quality is so often one decided by prejudice or fashion.

It is not to be understood that the above classification will include every instance of adulteration, or that all cases can be assigned to one or the other of the division; on the contrary, articles are often added which fulfil at the same time several different purposes. Thus mineral blues or green added to the teas for the purpose of "facing," as it is called, that is improving the color of the tea leaf, will, of course, increase also the weight of the article.

also cause pain when there is

stomach.

ture, 1872

1871; - 3<sup>d</sup> on Alimentation.

laccous principles -  
Cane & Grape Sugars -

different starches:

on board, Magnif. views of st. corpuscles,  
from Parkes? (Hassall).





may be acted on. The origin of the opinion is that when a tooth is already decayed, nothing is more likely to <sup>cause decay in</sup> ~~decay~~ it, than sugar. On the plantations, sugar cane is eaten, and in spite of its fibrous nature, the West Indian negroes who eat it, have better teeth than the majority of the people of this country; ~~know~~ <sup>know</sup> for it.

EATING OF SUGAR CANE.

SUGAR-WATER OF THE FRENCH.

<sup>Egyptians so too</sup> ~~Now~~ <sup>Now</sup> sweet, or sugar water is a French article. It is taken going to bed. A certain lecturer in France sipped his sugar water while lecturing. Prof. Haave formerly of the University took it. <sup>Rock-candy</sup> <sup>in each other</sup> <sup>children.</sup>

ADULTERATIONS OF SUGAR.

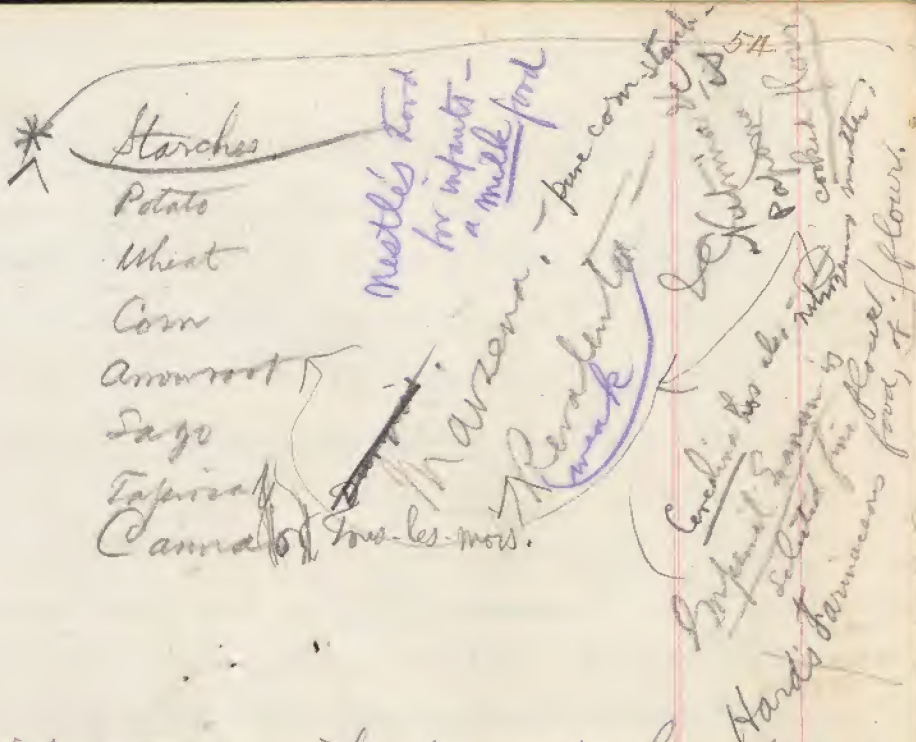
BROWN.

WHITE.

Adulterations of sugar are numerous. Brown sugar is <sup>as already said</sup> full of adulterations, <sup>spontaneous impurities</sup> ~~water~~; a <sup>minute</sup> portion of a fungus plant, pieces of cane, &c. <sup>out, acorns,</sup> The white is more commonly adulterated than the brown, especially when pulverized. Chalk, gypsum and marble are used. Marble has the same crystalline structure as sugar.

TEST.

Sifted sugar is less liable to be adulterated than pulverized. We can detect, <sup>marble or chalk</sup> by placing the sugar in water, when the marble &c will not dissolve.



↘ Arrow-root, with twice its weight of concentr. hydrochlor. acid  
 gives <sup>an</sup> opaque paste; potato-starch, a transparent, jelly-  
 like material. Boiling with  $SO_3$  water, evolves from potato-starch  
 a peculiar & rather disagreeable odor; none such from arrow-root.  
 Alcohol extracts from potato-starch an acrid oil; not  
 from arrow-root. This last, partly at least, explains the greater  
 fitness of arrow-root for a delicate stomach.



milk -

"cruel to kill animals -

Bible - & Palaeontology -

Diet of children -

Quillot - 2 1/4 pound milk - 1 1/2 quart

veg., or animal?

Can, of stomach, & milk, or veg. -

If meat - concentr. animal  
as lettuce

Diet of beak -

low diet - half oat - full d.

not run so settles -

Don't stomach disease as -

Autism on the way to death

Full digest - & then stare.

fever

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SAGE



wt

Arrowroot starch granules -

1/1400 inch long, arrow,

1/2400 " broad "

Bayonet

shaped - with concentric lines, & hilum (dark spot) with transverse line, at one end, generally **larger** end; sometimes radiating

Potato starch - granules,

Camu  
corpuscle  
much like  
potato  
in form larger still.

☆  
gives  
-like  
a pe  
Alc  
from  
fite

star shape - variable in size, 1/8000 to 1/250 inch

long - this is important different test.

Round, often disk-like - with or without hilum.

Tapioca - st. gr.

Small - 1/2000 inch, rounded - distinct hilum, with concentric rings.

Tahiti  
or  
Tava  
much  
like  
Tapioca  
but  
larger.

Sago - st. gr.

Oblong, round at one end, square at the other - hilum circular when perfect, but often cracked star-like, or cross -

Twice as large as arrowroot  
In pearl sago, altered in appearance.



under this

collet  
whitish  
in flour  
of flour.  
pharmaceut  
of flour.



STARCH.

- POTATO
- WHEAT
- CORN
- ARROW ROOT
- SAGO
- CANNA

We will next take up the starches. There are many varieties. \*Potato, wheat and corn starch, are the most common. The more delicate, which are good for sickness, are arrowroot, sago, tapioca and canna. The microscope detects the differences, as does the <sup>much less perfectly</sup> taste also. Potato and wheat starch, are not <sup>so</sup> good for the sick. Corn starch is <sup>four</sup> times used as a dessert. Various "farinas" <sup>"margarita"</sup> <sup>"be"</sup>

ARROWROOT.

Arrowroot is obtained from the maranta plant. The best comes from Bermuda. It is obtained from Georgia, Florida, &c., also. It is a thick, lumpy, white powder. ~~This is a nice article for a weak stomach.~~ It is <sup>a table spoonful or two to a pint</sup> macerated and boiled with milk <sup>or bowels</sup> to flavor it. To dissolve starch heat is

STARCH CORPUSCLES.

CANNA.

POTATO.

1460

SAGO.

required, to break the corpuscles which are in layers, onion like. Canna, or tousel-mois, has the largest corpuscles. Those of the potato <sup>in</sup> vary <sup>in</sup> <sup>in</sup> <sup>in</sup> \* Those of arrowroot are <sup>in</sup>  $\frac{1}{4}$  long and  $\frac{1}{4}$  of an inch broad. They have a transverse section and sometimes a star <sup>in</sup> on them. The sago corpuscles are twice as large as those of arrowroot. The marks

<sup>the</sup>  
 \* / *Sagwe* — Rumphii  
 or *Cycas revoluta* —

Cycades have parts — being intermediate  
 between exogens & endogens. —

d



(on them a  
corpuscle)

We may be almost see the  
a deeper layer. It is attached to the upper border of the patella, but assists,  
in conjunction with other fibres of the capsule, to form the so-called lateral  
ligaments of the joint.

SAGO.

Sago  
sago tree

Taking these points into consideration, we find that—(a) The musculus  
rectus and femoralis act upon the upper border of the patella; (b) the prin-  
cipal tendinous bundles of the two vasti are attached to the lateral borders of  
the patella; (c) Close to the patella, on its outer side, pass to the tuberosity  
of the tibia the tendons of the gluteus maximus and tensor fasciae femoris,  
along with the lateral tendinous bundles of the vastus externus, previously  
blended with the fascia lata; whilst on the inner side passes the tendon of the  
internus similarly blended with the fascia. From a surgical point of

PEARL SAGO

Africa. In the form of pearl sago,  
year. In the form of pearl sago,  
is good for ~~the~~ <sup>Persons</sup> sick <sup>in</sup> <sup>the</sup> <sup>stomach</sup> and <sup>of</sup> <sup>the</sup> <sup>throat</sup>.

TAPIOCA.

Tapioca is obtained from the <sup>manioc</sup> ~~patropa~~ <sup>of</sup> <sup>the</sup> <sup>West</sup> <sup>Indies</sup>. The plant  
is poisonous. The poison is driven off  
by heat and pressure. Tapioca is <sup>the</sup> most  
pleasant <sup>of these articles</sup> as dessert or sick diet.

CANNA.

Canna is little used here <sup>after Starch,</sup>  
The next of these <sup>principles</sup> is gum;  
as gum Arabic. It is of <sup>great</sup> no value as food.  
This was not always the <sup>opinion</sup> held.

GUM.

It was formerly given to the sick as a  
diet. When eaten it passes unchanged  
through the bowels. An apparently contradict-  
ory circumstance is that <sup>are said to</sup> Arabs <sup>make</sup> long  
journeys with gum as their food. This can  
hardly be accounted for unless they take  
coffee <sup>at least</sup> or that the <sup>crude</sup> gum <sup>being</sup> fresh from the  
tree is better than what we have in the refined form  
<sup>more nourishing</sup>

WELLER

ARABS.

*The Saccharifying Influence of Infants' Saliva.*

It has been hitherto generally believed that the secretion of the mouth of sucking infants does not possess the power of converting starch into sugar, as does that of older persons. SCHIFFER (*Reichert and Du Bois-Reymond's Archiv*, 1873) gives certain observations which show this to be incorrect. He placed little bags of tulle containing starch in the mouths of new-born infants, and of sucklings at various ages. In every case he found that on applying Trömmer's test to the contents the copper was reduced, showing the presence of sugar.—*Edin. Med. and Surg. Journ.*, Dec. 1873.

Cycas coronata —

Cycades have pits — being intermediate  
between exogens & endogens. —



(on them are) circular.) We cannot see the corpuscles in the pearl sago which we get.

SAGO.

Sago is obtained from the pith of the sago tree, which grows at Malaga and

PEARL SAGO

Africa. The tree is cut in the seventh year. In the form of pearl sago it is good for ~~the~~ <sup>Persons</sup> sick <sup>who need</sup> <sup>of food.</sup>

TAPIOCA.

Tapioca is obtained from the <sup>manioc</sup> ~~starch~~ of Brazil and the West Indies. The plant is poisonous. The poison is driven off by heat and pressure. Tapioca is <sup>the</sup> most pleasant <sup>of these articles</sup> as dessert or sick diet.

CANNA.

Canna is little used here. <sup>after Starch,</sup>

GUM.

The next of these <sup>almost</sup> ~~principles~~ is gum; as gum Arabic. It is of no value as food. This was not always the opinion held.

Heller

ARABS.

It was formerly given to the sick as a ~~poor~~ diet. When eaten it passes unchanged through the bowels. An apparently contradictory circumstance is that <sup>are said to</sup> Arabs make long journeys with gum as their food. This can hardly be accounted for unless they take coffee <sup>at least</sup> or that the <sup>crude</sup> gum, ~~being~~ fresh from the tree is ~~better~~ <sup>more nourishing</sup> than what we have in the refined form.



that near the chaffer grain husk is the most nitrogenous wheat phosphates now prepared from it. - (Crust)

Saline Principles: Mainly -

- chlorides - Sod. - potass
- phosphates - " "
- sulphates - " "

Salt necessary (Call for) - blood - gastric juice - & Calcium Magnesium

iron - in oleum foetus of codfish & lime-water with bread where bread is main food as wheat has little lime.

Heidulars

Pectic acid - with pectin in fruits (apples, pears, quinces, berries, cherries, oranges, tomatoes, onions, carrots, beets, turnips) & in milk

Acetic acid - in vinegar, some cheese & butter

Citric acid - Oranges, lemons, limes, & unripe grapes

Tartaric acid - Grapes

Malic - Apples, pears - especially aqueous & volatile in summer time

Undefined veg. substances some at least are known from a parent berry seen by.

Wholesome to eat a little raw veg. food every few days; Celery, lettuce, radishes, cole slaw, etc. -

Perhaps salts impart a crystalloid, definite form for condition & acid principle in vegetables.

\* Metabolic salt // P

End of 1873

Leave 2 pages space for this page